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Experimental Pressure Distributions on Axisymmetric Cowls at Mach Numbers From 0.60 to 0.92

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Summary

Pressure distributions on four nacelle cowl models of the same length and highlight area but different geometries external to the highlight are compared for Mach numbers from 0.60 to 0.92 at several mass-flow ratios. The diameter ratio (ratio of highlight diameter to maximum diameter) of the four cowls was 0.854 and the length ratio (ratio of cowl length to maximum diameter) was 0.439. The cowls had the same elliptical internal geometry from the highlight to the throat with a contraction ratio (ratio of highlight area to throat area) of 1.250. In addition pressure distributions for two other cowls having a diameter ratio of 0.880, a length ratio of 0.400, and a contraction ratio of 1.250 (elliptical geometry from the highlight to the throat) are also included. The external portion of the model downstream of the cowl maximum diameter was cylindrical in shape. All the cowls had longitudinal rows of static-pressure orifices on the top and bottom (external) surfaces, and on the contraction and diffuser (internal) surfaces. Some cowls also had external static-pressure orifices on one side. Depending on the cowl configuration and free-stream Mach number, the mass-flow ratio was varied within the range of 0.27 and 0.93 during the test. The data were obtained in the Langley 16-Foot Transonic Tunnel primarily at an angle of attack of 0° although at selected Mach numbers and mass-flow ratios some data were obtained at angles of attack in the range from -2.1° to 4.1°. Reynolds number per foot varied with Mach number from 3.2 x 10^6 to 4.2 x 10^6.

Introduction

Large jet-powered subsonic transport aircraft generally have engines installed in separate, essentially axisymmetric nacelles. Typically, the nacelle is pylon mounted (displaced from the airframe) to provide the cowl inlet with flow that is not significantly distorted by the presence of the airframe. This installation permits the cowl portion of the nacelle to be designed and developed relatively independently of the rest of the airframe. This displacement makes the historical cowl data base (refs. 1 to 12) useful in the design of subsonic airplane configurations that do not have the inlets integrated into the airframe.

Inlets for turbojet and turbofan powered subsonic aircraft must provide high-quality flow to the engine fan and compressor, produce low external drag, and be low in weight. Low weight implies shortening the cowl, and therefore it's internal flow path as much as possible, while maintaining good internal and external performance. The internal flow path is shortened by selecting a large throat diameter and contouring the diffuser so that the flow is near the limit for the onset of flow separation but still of high quality. Based on external flow considerations, the cowl drag is minimized by making the cowl maximum diameter and length as small as possible while still obtaining the desired drag-rise Mach number and critical mass-flow ratio. The critical mass-flow ratio (which occurs while operating below the compressibility drag-rise condition) can be defined as the point at which external drag increases rapidly because of separation or shocks on the cowl when mass flow through the inlet is reduced. However for commercial applications, the need to suppress engine noise that passes through the inlet is also a factor affecting diffuser design because it may limit the minimum length of the nacelle forebody.

Many subsonic transport nacelle cowls used in the past have been based, at least in part, on the contour of the NACA 1-series cowls, which were developed in the 1940's. The relatively small NACA 1-series leading-edge radius external to the cowl highlight (most forward point on the cowl lip) results in good high speed external drag characteristics. The NACA 1-series contour was developed with emphasis on cowl external flow quality and performance with the assumption that obtaining good internal performance (i.e. contraction section and diffuser shape) would be a separate design endeavor. References 1 to 11 contain some of the published experimental data obtained on NACA 1-series contours. In practice, some compromise in the high-speed external performance of the NACA 1-series contour has often been necessary to achieve acceptable performance at low-speed, wind milling, and static crosswind conditions. This has usually been done by increasing the cowl leading-edge radius (blunting the lip). In some investigations of cowls with external elliptical longitudinal contours (e.g. ref. 9), flow separation on the cowl forebody was delayed to higher mass-flow ratios and Mach numbers than for comparable NACA 1-series contours because of the significantly blunter forward contour. However, the drag-rise Mach number with the elliptical cowl contour was lower for a given mass-flow ratio.

Now with the evolution of high speed computers the opportunity to utilize computational fluid dynamic codes as tools for inlet design exists. A part of the development of confidence in the usefulness of computational tools is the verification of their reliability and accuracy by validating the computer code results with experimental data. To this end a number of cowls were designed using various approaches, and models were constructed for testing. The scope of this effort is described in reference 13. Four of these cowls (one of which was an NACA 1-series cowl) having a length ratio of 0.439 (cowl length ratioed to maximum diameter), a diameter ratio of 0.854 (highlight diameter ratioed to maximum diameter), and identical elliptical internal contraction geometry (from the highlight to the throat) were investigated to determine the effect of cowl contour external to the highlight on the static pressure distribution at various Mach numbers and mass-flow ratios. Two other cowls having a length ratio of 0.400, a diameter ratio of 0.880, and elliptical internal contraction geometry were also tested. All the inlets have a contraction ratio of 1.250 (ratio of highlight area to throat area). Some comparisons of computational results from early computer code efforts with experimental data obtained on several of the inlets are contained in reference 13. These data are being presented in detail to augment the published cowl data base which is predominantly for NACA 1-series designs.

The experimental investigation was conducted in the Langley Research Center 16-Foot Transonic Tunnel. Cowl pressures were obtained at Mach numbers ranging from 0.60 to 0.92, mass-flow ratios within the range from 0.27 to 0.93, and at angles of attack within the range from -2.1° to 4.1° (at selected mass-flow ratios and Mach numbers). Cowl external static pressures were measured in rows on the top and bottom surfaces in the plane of vertical symmetry. Internal contraction section and diffuser wall static pressures were also measured. The data obtained on two of the cowls has been previously published in detail as part of references 11 and 12.

Symbols

A area normal to model centerline, in^2

C_p pressure coefficient, $(p - p_0)/q_0$

$C_{p,t}$ stagnation pressure coefficient

D_{max} maximum external diameter of model, 18.0 in.

L length of cowl from lip (highlight) to start of cylindrical portion of model, see fig. 1

M freestream Mach number

mfr mass-flow ratio based on inlet area at the highlight, $1/(\rho_0 A_h V_0)\int \rho_r V_r dA$

p local static pressure, psi

p_0 freestream static pressure, psi

q_0 freestream dynamic pressure, psi

r local radius from model axis of symmetry, in.

R_0 freestream Reynolds number, per foot

R_p radius from axis of symmetry to rake pressure probe, in.

R_W local radius from axis of symmetry to model duct outer wall, 8.40 in.

V velocity, ft/sec

X longitudinal distance measured aft of the cowl lip (highlight), in.

y cowl local thickness, in.

y_{ell} elliptical cowl local thickness, in.

Y cowl maximum thickness, $r_{max} - r_h$, in.

α angle of attack with respect to forebody centerline, deg

ρ density, $slug/ft^3$

ϕ meridian angle, measured from top of model in clockwise direction when looking upstream, deg

Subscripts:

ell ellipse

h highlight, most forward point on cowl lip

max	maximum
r	mass-flow rake pressure measuring station in duct
0	freestream conditions

Column Headings and Symbols on Data and Coordinate Tabulations:

CP	pressure coefficient, $(p - p_0)/q_0$
X/L	nondimensionalized distance, in percent, from cowl lip measured longitudinally (aft) with negative values indicating locations on the cowl internal surface

Models

A complete model assembly consisted of a cowl attached to a cylindrical section (D_{max} = 18.0in.) supported by a sting-mounted force balance, and an afterbody (also cylindrical) attached to the sting downstream of the balance. A remote-controlled mass-flow throttle plug was mounted on the sting at the afterbody exit. The throttle plug was driven along the sting by an internal electric motor and had a range of travel of about 10 inches. The flow area at the exit of the model (normal to the centerline) could be varied from 27.5in^2 to 244.9in^2 (i.e. for the throttle plug in its two extreme positions). Figure 1 is a simplified cross-sectional sketch of the model assembly, and figure 2 is a photograph of a typical model installation in the wind tunnel test section.

The model forebody (comprised of a cowl and a cylindrical section) was supported by four aerodynamic struts connected to a force-balance mounted centerbody. The cylindrical afterbody had a length of 24.50 in. and a diameter of 18.0 in., and was supported by four struts attached to the support sting. A 0.10 in. wide gap between the metric forebody and non-metric afterbody was spanned by a free-floating flexible strip to inhibit flow leakage (see "Detail" in figure 2). All the cowls had longitudinal rows of static-pressure orifices on the top and bottom external surfaces and on the contraction and diffuser surfaces. Some of the cowls also had external pressure orifices on one side. Three of the four struts supporting the forebody were instrumented with total and static pressure probes (fig. 3) to measure the internal mass flow. These struts were also used to route the tubes from the inlet surface static-pressure orifices to differential pressure-scanning units mounted in the nose portion of the centerbody. All pressure tubes associated with the afterbody were routed into the sting through the four rear support struts and then out through the model support system to an externally mounted differential pressure-scanning unit.

Although cowls A through D were of the same length (L) the cylindrical length of the forebody differed (see table in fig. 1) with these cowls installed. The different empirical and computational design approaches used for the cowls, other than the NACA 1-series cowl, are not available for publication but nondimensionalized cowl external and internal coordinates are presented in table 1. A graphical representation of the dimensional external contour differences between the forward portions of cowls A through D is presented in figure 4(a) and for cowls E and F in figure 4(b). The cowls had diameter ratios (ratio of cowl highlight diameter to cowl maximum diameter) of either 0.854 (cowls A through D) or 0.880 (cowls E and F) and a contraction ratio (ratio of highlight area to throat area) of 1.250. A comparison of the local cowl thickness ratioed to the local thickness of an elliptical longitudinal contour at the same percent of cowl length having the same maximum thickness (r_{max} - r_h) is presented in figure 5 for cowls A through F. Cowls B and E are derived from the same nondimensional cowl contour as can be seen in figure 5 by the identical relationship of cowl B and E local coordinates to the coordinates of equivalent elliptical cowl shapes of the same length and highlight diameter ratios. Cowls C and F are also related in this manner.

Wind Tunnel

The investigation was conducted in the Langley Research Center 16-Foot Transonic Tunnel which is a single-return atmospheric wind tunnel with continuous air exchange. The test section is octagonal in shape with 15.5 feet between opposite walls (equivalent in area to a circle 16 feet in diameter) and has axial slots at the wall vertices. The total width of the eight slots in the vicinity of this model is approximately 3.7 percent of the test section perimeter. The extreme limits of solid blockage of the model in the test section are

between 0.88 percent for no flow through the model (a condition that does not occur during testing) and 0.79 percent for the throttle plug area only (i.e., the throttle plug in its most rearward position). The tunnel sting support system pivots in such a manner that the model remains on or near the test section centerline through the angle-of-attack range. References 14 to 16 contain details of the operation of the tunnel and its flow qualities.

Tests and Methods

Each cowl was tested at an angle of attack of 0° and at angles of attack within the range of -2.1° to 4.1° at selected Mach numbers and mass-flow ratios. Freestream Reynolds number per foot varied with Mach number from 3.2 x 10^6 to 4.2 x 10^6 (fig. 6). All the data presented herein are for artificially fixed boundary-layer transition on the internal and external surfaces of the model. Boundary-layer transition was fixed on the external surface of the model by applying a 0.10-inch wide circumferential strip of No. 120 silicon carbide particles 0.6 in. aft (streamwise) of the cowl lip. Boundary-layer transition on the cowl internal flow surface was fixed by applying a 0.10-inch wide circumferential strip of No. 120 silicon carbide particles at the geometric throat.

Angle of attack of the metric forebody was computed by correcting the measured pitch angle of the support system for deflection of the sting and force balance (due to aerodynamic forces and moments) and for tunnel flow angularity. Although the test was conducted with the model forebody mounted on a force balance, these data are not presented because the axial force component of the balance was damaged during the test and the axial force data were considered to be inaccurate. However, the balance normal force and pitching-moment readings were accurate and were used to compute inlet angle of attack by the "sting" deflection method. Internal mass flow was calculated using the free-stream total temperature, the rake area-weighted stagnation pressures, and the static pressures from the rake, centerbody surface, and duct wall.

The present investigation obtained pressure distributions on cowls isolated from the flowfield influence of a nacelle afterbody boattail or airframe component. The model downstream of the cowl was cylindrical in shape with a diameter equal to the cowl maximum diameter (figure 1). This apparatus was also used in the tests of reference 10 where the range of mass flows through the model was limited by throttle plug geometry. For this investigation the mass-flow range capability was expanded to include lower mass-flow rates by increasing the throttle plug maximum diameter. The results of references 9 (14 in. of afterbody boattail) and 10 (afterbody cylindrical to the exit) indicate that the exit plume had no significant effects on cowl pressure distributions for the range of Mach numbers and mass-flow ratios of the current investigation. During a part of this investigation external flow field total pressure data were obtained from three wake survey rakes mounted on the model afterbody. This data was used in integrated form in reference 13 to obtain drag differences between the various cowls, and with the surface pressure distribution differences.

No corrections have been made to the pressure data for test section wall interference effects. The presence of the movable mass-flow plug did affect the afterbody external flow field and that pressure data is not presented

Presentation of Results

Summaries indicating where the tabular and graphical pressure coefficient data can be found for cowls A, B, E, and F are contained in tables 2 through 5 which also include nominal test condition information. Graphical comparisons of pressure distributions over the four cowls having a diameter ratio of 0.854 (cowls A, B, C, and D) are presented in figures 15 through 19 for five selected Mach numbers. Graphical comparisons of the two cowls having a diameter ratio of 0.880 (cowls E and F) are presented in figures 20 through 24 for five selected mach numbers. Some graphical data illustrating the movement of the stagnation point (for the $\phi = 0°$ row of pressures) with changing mass-flow ratio on the lip of cowl F at zero degrees angle of attack are presented in figure 25. The effect of small variations in angle of attack at constant mass-flow ratios on stagnation point location on cowl F is shown in figure 26.

The local internal and external pressure coefficients for cowls A, B, E, and F are presented in tables 6, 7, 8, and 9. The tables include the nondimensionalized orifice locations, X/L, in percentage form where a negative value of X/L indicates that the orifice is located on the internal surface (downstream of the highlight) of the cowl.

The pressures are presented for two or three meridian angles (ϕ) for the cowl portion of the four configurations. Inlet mass-flow ratio and angle of attack are given at the top of each table. Complete tabular and some graphical pressure coefficient data presentations for cowls C and D are contained in references 12 and 11, respectively. Afterbody (see fig. 1) pressures are omitted from this report but the tables of references 12 and 11 include afterbody pressures measured with cowls C and D installed.

Results

The NACA 1-series contour was developed in the 1940s to perform efficiently at high subsonic Mach numbers at high mass-flow ratios and was successfully used in that application for many years. However aerodynamic and propulsion system advances over the years have resulted in a significant increase in the design cruise Mach number of jet powered subsonic transport aircraft which must perform efficiently over the expanded range of Mach numbers and engine mass-flow conditions. This presents a design challenge for the nacelle intake if a fixed geometry cowl is to be used to avoid increased complication, weight, cost, and maintenance considerations.

When the NACA 1-series contour is used in the lower transonic speed range for subsonic transport airplanes with a fixed geometry cowl less than desirable performance can occur when off design at the lower Mach number and mass-flow conditions because the cowl lip contour becomes sharper as design Mach number is increased. When a fixed geometry inlet is operating at low mass-flow ratio (or at crosswind conditions) the stagnation point moves further into the contraction portion of the inlet and more flow is spilled. For this condition the flow external to the stagnation streamline undergoes significant expansion in the contraction portion of the cowl before it reaches the highlight and then is further expanded over the lip portion of the cowl. At extremely low mass flow conditions overexpanded flow over a relatively sharp lip can result in flow separation near the leading edge and adversely affect the development of flow over the remainder of the cowl. An example of the expansion process for relatively low mass-flow ratios is shown in the pressure coefficient data of figure 25 (not an NACA 1-series cowl contour). Detailed discussion about the consequences of local cowl curvature changes on the external flow as it proceeds downstream of the lip is contained in reference 19 and insight is provided into approaches to tailor cowl shape to improve performance relative to the NACA 1-series contour at the extremes of the operating envelope.

An empirical study performed in reference 17 on the drag of several NACA 1-series inlets showed that cowl drag rise Mach number correlated with the thickness ratio, $(r_{max}^2 - r_h^2)^{0.5}/L$, of an ellipsoid and that this ratio (0.5937 for all cowls discussed herein) could be utilized in the selection of cowl length to a first approximation for a desired designcruise Mach number. Also presented in reference 17 is a correlation for critical mass-flow ratio (a measure of off-design performance when the cowl is operating below the compressibility drag rise design condition) as a function of a cowl lip parameter. This parameter was derived in terms of the leading-ege radius of curvature for NACA 1-series cowls, $(1 - r_h/r_{max})^2/(L/r_{max})$, to define the point at which a further decrease in mass flow results in an abrupt drag increase. For cowls A through D this parameter is 0.0244 and for cowls E and F it is 0.0180. Correlations for drag data derived from wake rake pressure surveys conducted during the present investigation are included in reference 13 for the present cowls and those of references 11 and 12 along with data from many other cowls. The conclusion was drawn in reference 13 that the two geometric correlation parameters of reference 17, to a first approximation, are strong predictors of cowl performance capability and that cowl contour is of somewhat lesser importance.

The ensuing discussion of results will concentrate primarily on the pressure coefficient data comparisons presented at selected Mach numbers and mass-flow ratios for cowls A through D and cowls E and F. Graphical pressure coefficient comparisons of cowls E and F with the other four cowls are not presented since cowls E and F are shorter (L in fig. 1) and have a larger highlight diameter (figs. 4(a) and (b)). It should be noted that cowls B and E although of different highlight diameter and length are derived from the same nondimensionalized cowl contour as illustrated in figure 5 by the identical relationship of their local coordinates to the local coordinates of an equivalent ellipse. The same is true of cowls C and F. The designations of the cowls for which data are presented in the references differ from those used in this report. To facilitate identification of the appropriate cowls in the references the

equivalent designations are listed in the geometry table included in figure 1.

Comparison of Pressure Distributions on Cowls A through D at an Angle of Attack of 0°

The pressure distributions of the four cowls having the same length ratio (ratio of cowl length to maximum diameter, 0.439), and the same diameter ratio (ratio of highlight diameter to maximum diameter, 0.854) are compared in figures 15 through 19 for selected Mach numbers at various mass-flow ratios. The contraction and diffuser geometries of the four cowls are identical so that all pressure distribution differences are due to contour differences external to the highlight. The forward external portions of cowls A, B, and C have been made blunter relative to cowl D (an NACA 1-series contour, see fig. 4(a)), with the intent of sustaining low pressures on the cowl leading edge at lower speeds and mass-flow ratios without separating the flow, and still have the potential to approach the drag rise Mach number capabilities of the NACA 1-series contour. Data comparisons for some of the cowls can be made at other Mach numbers and mass-flow ratios using the tabulated data presented herein and the tabulated data presented in reference 12 for cowl C (identified therein as the medium cowl) and reference 11 for cowl D (identified therein as NACA 1-85-43.9). At some combinations of Mach number and mass-flow ratio pressure data were not available for all four cowls. Analysis in reference 13 of the drag coefficient data derived from the wake rake pressure surveys taken during this investigation led to the conclusion that the NACA 1-series cowl (D) had better drag performance than the other three cowls through the Mach number range. The differences were relatively small and cowl C nearly matched the drag performance of cowl D at low to medium Mach numbers but was inferior above Mach number 0.82. Cowl A due to its blunter lip contour had the earliest drag rise Mach number (approximately 0.795).

At the lowest Mach number (0.60) and mass-flow ratio (0.27) at which a pressure distribution comparison is presented (fig. 15(a)) cowl A (bluntest lip, see fig. 4(a)) had the highest negative pressure coefficient peak. Cowl B had the lowest negative pressure coefficient peak and appeared to be separated between the cowl highlight and 12 percent X/L; after which pressure recovery occurred. There was a significant difference in the ability of cowls B and C to sustain a pressure peak at these conditions over the first 10 percent of cowl length despite having similar geometry (fig.4(a)) in the vicinity of the cowl lip. Cowl D, which had the sharpest lip, had a pressure peak comparable to cowl C and displayed good pressure recovery up to about 12 percent of cowl length at which flow separation occurred followed by the resumption of pressure recovery aft of 20 percent of cowl length. At a mass-flow ratio of 0.50, which is representative of the engine wind milling condition at this Mach number, the negative pressure peak for cowl A decreased while cowls C and D (sharpest lips) maintained approximately the same peak values of pressure coefficient as at the lowest mass-flow ratio. The forward flow separation on cowl B observed at a mass-flow ratio of 0.27 disappeared and pressure recovery started further forward. As higher mass-flow ratios (fig. 15(b) and (c)) the negative pressures near the lip on all four cowls decreased significantly and cowl A had the greatest negative pressure coefficients between 5 and 20 percent of cowl length. There was little difference in the recovering pressure distributions over the aft 60 percent of the cowl.

Although data were not obtained for cowl A at the lowest mass-flow ratio at a Mach number of 0.77 (fig. 16(a)) it is apparent from data obtained at the low mass-flow ratio at Mach numbers 0.69 and 0.74 (figs. 7(a) and 7(b)) that a high negative pressure peak would not have occurred. The three cowls for which data was available at a mass-flow ratio of 0.27 reached nearly the same negative pressure peak at the same cowl station and had essentially the same rate of pressure recovery from about 3 to 70 percent of cowl length. When mass-flow ratio was increased to 0.50 cowls C and D had the higher negative pressure peaks while cowls A and B had more rounded pressure distributions from the highlight to 7 percent cowl length. All four cowls had the same pressure recovery between 7 and 20 percent of cowl length but between 20 and 50 percent cowl length cowl A had a longer pressure recovery than the other cowls which apparently encountered shocks and flow separation. At a mass-flow ratio of 0.61 (fig. 16(b)) cowl D, which had the highest negative pressure peak at about 2 percent of cowl length, had a steep pressure recovery or a shock forward on the cowl followed by separation between 9 and 15 percent of cowl length. Cowl A had a rounded pressure distribution over the forward portion of the cowl and reached

it's peak negative pressure coefficient at about 10 percent of cowl length. A drop in negative pressure coefficient between 30 and 40 percent of cowl length on cowl A indicates the possibility of a shock although there are no pressure orifices there. At a mass-flow ratio of 0.69 cowl A had the highest negative pressure coefficient downstream of the lip of any of the cowls and the abrupt drop in pressure coefficient occurred further forward between 20 and 30 percent of cowl length. Further increase in mass-flow ratio increased the difference in maximum negative pressure coefficient between cowl A and the other three cowls. The leading-edge pressure peak on cowl D decreased the most and it's pressure distribution became more rounded. At mass-flow ratios greater than 0.69 the rounding of the pressure distributions on the forward portions of cowls B, C, and D increased and the pressure peaked further forward on cowl A as the shock moved forward.

Data were not obtained for cowl A at mass-flow ratios of 0.27 and 0.50 at a Mach number of 0.84 (fig. 17(a)). The pressure distributions on the other three cowls were similar over the forward 70 percent of cowl length. At a mass-flow ratio of 0.27 a shock formed aft of the 70 percent station on all three cowls with probable flow separation at 100 percent of cowl length. At a mass-flow ratio of 0.50 the shock occurred at 70 percent of cowl length for all three cowls with pressure recovering over the downstream portion of the cowls. At mass-flow ratios of 0.61 and 0.69 (fig. 17(b)) data were obtained for all four cowls and cowl D (NACA 1-series contour) had a more distinct pressure peak near the cowl leading edge than the other three cowls. Cowl A pressure coefficient reached about the same level as the peak pressure of cowl D but this occurred about 10 percent further aft and that pressure level was maintained back to about 60 percent where an abrupt recompression occurred. Similar recompressions occurred for cowls B and C. The pressure peak near the leading edge of cowl D diminished considerably between mass-flow ratios of 0.69 and 0.74 (fig. 17(c)) and cowl A had the highest negative pressure coefficient at a mass-flow ratio of 0.74 with a sharp recompression or shock starting at about 60 percent of cowl length. At a mass-flow ratio of 0.80 the flow over the forward portion of the cowls aft of 5 percent of cowl length was similar to that at a mass-flow ratio of 0.74 but the recompression on the aft portion of cowl A was more gradual.

At a Mach number of 0.87 data were not obtained for cowls A and B at a mass-flow ratio of 0.27 (fig. 18(a)). The data for cowls C and D were similar in trend with cowl C having slightly greater negative pressure coefficients between 20 and 80 percent of cowl length. Cowl C had a shock above 90 percent of cowl length and both cowls C and D appear to be separated or still recompressing aft of the end of the cowl. At a mass-flow ratio of 0.50 data were obtained on cowls B, C, and D with cowls C and D having more distinct negative pressure peaks near their leading edges. All three cowls had a shock at 90 percent of cowl length. At a mass-flow ratio of 0.61 (fig. 18(b)) data were obtained for three cowls and cowl D once had the most distinct pressure peak near the leading edge. At this condition the flow appears to have shocked down or recompressed completely just aft of the end of the cowls. At a mass-flow ratio of 0.69 the pressure distributions over the forward portion of the cowls were similar to those obtained at this mass-flow ratio at Mach number 0.84 (fig. 17(b)) but the pressure recovery at the aft end of the cowl was more complete. Cowl D maintained a low leading edge pressure peak but there was an indication of separation over 10 percent of the cowl just aft of the pressure peak. At a mass-flow ratio of 0.74 (fig. 18(c)) the pressure peak for cowl D has essentially collapsed and a small area of separation exists on the forward portion of the cowl. Cowl A had the highest negative pressure coefficients between 5 and 80 percent of cowl length at mass-flow ratios of 0.74 and 0.80 and there was essentially complete pressure recovery at 100 percent of cowl length for all the cowls.

At a Mach number of 0.89 where the performance of subsonic cowls designed for Mach numbers in the vicinity of 0.84 will be poor, especially at low mass-flow ratios, the data obtained at mass-flow ratios of 0.27, 0.50, and 0.61 for cowls B, C, and D (figs. 19(a) and (b)) indicate extensive aft flow separation. At a mass-flow ratio of 0.69 the leading edge pressure peaks disappeared on cowls A, B, and C but the beginning of pressure recovery aft of the end of the cowls is most evident on cowls A and B. At mass-flow ratios 0.74 and 0.80 the leading-edge pressure peak of cowl D essentially disappears (fig. 19(c)) and cowl A has the higher negative pressure coefficients over most of the cowl length.

Comparison of Pressure Distributions on Cowls E and F at an Angle of Attack of 0°

Comparison in reference 13 of drag coefficient data derived form the wake rake pressure surveys for cowls E and F indicates that cowl F has the better drag performance at low to medium Mach numbers. However the drag rise Mach number (approximately 0.84) for cowl F at the lowest drag coefficient shown in reference 13, although quite high, was lower than that for cowl E. The drag increase with Mach number for cowl E at a given mass-flow ratio was gradual so that a distinct drag rise Mach number was not evident as a break in the data trend.

Cowls E and F (diameter ratio of 0.880 and length ratio of 0.400) were similar in external geometry near the lip (fig. 4(b)) with cowl F being the blunter of the two close to the highlight. At the lowest Mach number (0.60) and mass-flow ratio (0.27) cowl F did not sustain a pressure peak and was separated (fig. 20(a)) while cowl E (data taken at a higher mass-flow ratio) had a larger negative pressure peak and better pressure recovery over the length of the cowl. At a mass-flow ratio of approximately 0.54 both cowls had a high pressure peak followed by a strong pressure recovery with no separation. As mass-flow ratio was increased the pressure peaks of both cowls decreased greatly (figs. 20(b) and (c)) such that at a mass-flow ratio of about 0.83 there was essentially no pressure peak. Both cowls showed signs of flow separation over the forward portion of the cowl at mass-flow ratios of 0.65 or above.

At a Mach number of 0.77 both cowls (fig. 21(a)) had a nearly uniform pressure distribution over the forward 50 percent of cowl length at the lowest mass-flow ratio (0.27) and were separated. At the next larger mass-flow ratio (0.49) both cowls maintained a pressure peak with a gradual pressure recovery aft of the peak followed by a shock between 30 and 40 percent of cowl length. When mass-flow ratio was increased to 0.59 (fig. 21(b)) the shock moved forward to between 20 and 30 percent of cowl length. At that mass-flow ratio and above cowl E generally had a more rounded pressure distribution near the leading edge and a lower peak pressure than cowl F. At a mass-flow ratio of 0.75 or greater cowl E maintained a higher level of negative pressure coefficient between the pressure peak and 10 percent of cowl length (figs 21(b) and (c)).

At a Mach number of 0.80 (fig. 22) the pressure distributions on the two cowls were similar to those at Mach 0.77 except that shocks occurred further aft at comparable mass-flow ratios. At a Mach number of 0.84 (fig. 23(a)) cowl E data was not obtained at as low a mass-flow ratio as for cowl F and, as was the case for the low mass-flow ratio data of Mach number of 0.60, cowl E sustained a pressure peak and pressure recovery while cowl F did not. The flow on cowl F appears to be separated over the length of the cowl. The pressure distribution comparisons at other mass-flow ratios were similar to those at a Mach number of 0.80 except that negative pressure coefficients were lower and once again the shock occurred further aft. At the highest Mach number (0.89) both cowls sustained a pressure peak (fig. 24 (a)) at the lowest mass-flow ratio (even though there were mass-flow ratio differences at which the data were obtained). At this Mach number there were only very small differences in the cowl pressure distributions aft of about 20 percent of cowl length and flow separation persisted through the mass-flow ratio range with an indication of pressure recovery on the cylindrical portion of the model as mass-flow ratio was increased.

Pressure Distributions at Small Angles of Attack

The models were tested at small angles of attack at some Mach numbers and mass-flow ratios to obtain the effect of cowl attitude on the pressure distributions. The models were always pitched in the vertical plane with the densest row of pressures on the top of the cowl ($\phi = 0°$). Cowls B and E also had a row of pressures on the side ($\phi = 90°$) so that when they were pitched those pressure distributions represent cowl sideslip conditions for zero degrees angle of attack. However since the range of model pitch angles was relatively small the effect of sideslip on the pressure distributions was small. Therefore none of the $\phi = 90°$ pressure coefficient data are presented graphically but are contained in tables 7 and 8.

The effects of angle of attack on pressure distributions on the top and bottom of cowls A, B, E, and F are presented in figures 8, 10, 12, and 14, respectively. Similar plots for cowls C and D are contained in references 12 and 11, respectively. In general the effects of angle of attack on the cowl pressure distributions are as expected. That is, as

angle of attack was increased for constant Mach number and mass flow ratio conditions, the negative pressure coefficient on the top of the cowl increased in magnitude and pressure recovery aft of the pressure peak extended over a greater percentage of cowl length. The plots which include pressure coefficients from the top and bottom of the cowls sometimes give an indication that at 0° angle of attack at the lowest Mach number and mass-flow ratio the flow over the cowl was non-uniform when separation occurred (e.g. cowl F at Mach number 0.59 and mass-flow ratio 0.26, fig. 14(a)).

Movement of Stagnation Point on Lip of Cowl F

The movement of the stagnation point on a cowl lip with changing mass-flow ratio at a given Mach number can best be shown by plotting pressure distributions against some exaggerated form of the radial ordinate of the pressure orifices as is described in reference 18. To illustrate this some of the zero degree angle of attack pressure coefficient data for cowl F have been replotted versus $(r/D_{max})^2$ in figure 25 for various mass-flow ratios at constant Mach numbers. As would be expected for the range of mass-flow ratios tested the stagnation point remained in the contraction portion of the cowl (i.e. between the highlight and the throat). Comparison of the stagnation point locations for a given mass-flow ratio at the various Mach numbers indicates that the location of the stagnation point is nearly independent of Mach number. Although Mach number did not noticeably affect the location of the stagnation point it did affect the cowl flow external to the stagnation streamline as indicated earlier. For cowl F peak (negative) external pressure coefficient (fig. 25) at $(r/D_{max})^2$ between 0.20 and 0.21 decreased with increasing Mach number at a given mass-flow ratio for mass-flow ratios above 0.45. However comparison of the pressure coefficient levels for the three lowest mass-flow ratios in this $(r/D_{max})^2$ range shows that the cowl sustains lower pressures with increasing Mach number.

Stagnation point location on the lip of cowl F for the $\phi = 0°$ row of pressures over the limited angle of attack range investigated is shown in figure 26 for Mach number 0.84 at several mass-flow ratios. The stagnation point, as indicated by the internal pressure coefficients, moved slightly towards the throat as angle of attack was increased to 3° at the mass-flow ratios presented.

Concluding Remarks

Graphical and tabulated pressure coefficient data are presented for fixed geometry axisymmetric cowls designed for subsonic speeds to augment the existing published data base. Comparisons of pressure distributions over cowls of the same highlight diameter and length have been made to illustrate the effect of variations in lip geometry external to the highlight on the cowl external flow over a range of Mach numbers and inlet mass-flow ratios. An NACA 1-series cowl (1-85-43.9) was included so that comparisons could be made to a well documented cowl design. Although data were obtained primarily at 0° angle of attack some data were obtained at selected Mach numbers and inlet mass-flow ratios at angles of attack in the range from -2.1° to 4.1°.

References

1. Baals, Donald D.; Smith, Norman F.; and Wright, John B.: *The Development and Application of High-Critical-Speed Nose Inlets. NACA Rep. 920, 1948*. (Supercedes NACA ACR L5F30a.)

2. Nichols, Mark R.; and Keith, Arvid L., Jr.: *Investigation of a Systematic Group of NACA 1-series Cowlings With and Without Spinners*. NACA Rep. 950, 1949. (Supercedes NACA RM L8A15.)

3. Pendley, Robert E.; and Robinson, Harold L.: *An Investigation of Several NACA 1-series Nose Inlets With and Without Protruding Central Bodies at High-Subsonic Mach Numbers and at a Mach Number of 1.2*. NACA TN 3436, 1955.

4. Pendley, Robert E.; Robinson, Harold L.; and Williams, Claude V.: *An Investigation of Three Transonic Fuselage Air Inlets At Mach Numbers From 0.4 to 0.94 and at a* Mach Number of 1.19. *NACA RM L50H24, 1950.*

5. Nichols, Mark R.; and Pendley, Robert E.: *Performance of Air Inlets at Transonic and Low Supersonic Speeds*. NACA RM L52A07, 1952.

6. Pendley, Robert E.; Milillo, Joseph R.; and Fleming, Frank F.: *An Investigation of Three NACA 1-series Nose Inlets at Subsonic and*

Transonic Speeds. NACA RM L52J23, 1953.

7. Pendley, Robert E.; and Smith Norman F.: *An Investigation of the Characteristics of Three NACA 1-series Nose Inlets At Subcritical and Supercritical Mach Numbers*. NACA RM L8L06, 1949.

8. Pendley, Robert E.; Milillo, Joseph R.; Fleming, Frank F.; and Bryan, Carroll R.: *An Experimental Study of Five Annular-Air-Inlet Configurations at Subsonic and Transonic Speeds*. NACA RM L53F18a, 1953.

9. Re, Richard J.: *An Investigation of Several NACA 1-series Axisymmetric Inlets at Mach Numbers From 0.4 to 1.29*. NASA TM X-2917, 1974.

10. Re, Richard J.: *An Investigation of Several NACA 1-series Inlets at Mach Numbers From 0.4 to 1.29 for Mass-Flow Ratios Near 1.0*. NASA TM X-3324, 1975.

11. Re, Richard J.; and Abeyounis, William K.: *A Wind Tunnel Investigation of Three* NACA *1-Series Inlets at Mach Numbers Up to 0.92*. NASA Technical Memorandum 110300, 1996.

12. Re, Richard J.; and Abeyounis, William K.: *Wind Tunnel Investigation of Three Axisymmetric Cowls of Different Lengths at Mach numbers From 0.60 to 0.92*. NASA Technical Memorandum 4488, 1993.

13. Krivec, D. K.; Ling, R. T.; and Vadyak, J.: *Investigation of Transonic Inlet Drag Characteristics*. SAE Paper 841539, 1984.

14. Capone, Francis J.; Bangert, Linda S.; Asbury, Scott C.; Mills, T. L.; and Bare, E. Ann: The NASA Langley 16-Foot Transonic Tunnel. *Historical Overview, Facility Description, Calibration, Flow Characteristics, and Test Capabilities*. NASA TP-3521, 1995.

15. Couch, Lana M.; and Brooks, Cuyler W., Jr.: *Effect of Blockage Ratio on Drag and Pressure Distributions for Bodies of Revolution at Transonic Speeds*. NASA TN D-7331, 1973.

16. Dougherty, N. S., Jr.; and Steinle, Frank W., Jr.: *Transition Reynolds Number Comparisons in Several Major Wind Tunnels*. AIAA Paper No. 74-627, July 1974.

17. Butler, S. F. J.: *Aircraft Drag Prediction for Project Appraisal and Performance Estimation*. AGARD CP-124, 1973.

18. Seddon, J.; and Goldsmith, E. L.*: Intake Aerodynamics*. AIAA Education Series, 1985.

19. Langley, M. L.: *The Design of Axisymmetric Cowls for Podded Nacelles for High By-Pass Ratio Turbofan Engines*. ARC R & M No.3846, May 1979.

Table 1. Cowl Coordinates

(a) Cowl A

[Nondimensionalized coordinates in percent]

External Coordinates				Internal Coordinates			
X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	r/r_{max}	X/L	r/r_{max}
0.000	0.000	9.877	49.355	0.000	85.356	183.614	89.944
0.063	4.560	10.447	50.539	0.127	84.467	189.946	90.522
0.127	6.419	11.080	51.806	0.253	84.089	196.277	91.056
0.190	7.830	11.713	53.020	0.507	83.578	202.609	91.544
0.253	9.014	12.410	54.310	0.760	83.178	208.940	91.989
0.317	10.046	13.170	55.653	1.013	82.844	215.272	92.378
0.380	10.979	13.929	56.950	1.266	82.556	221.603	92.711
0.443	11.829	14.752	58.300	1.899	81.956	227.935	92.978
0.507	12.610	15.576	59.598	2.533	81.456	234.266	93.167
0.570	13.354	16.462	60.941	3.166	81.022	237.432	93.233
0.633	14.044	17.412	62.329	3.799	80.644	240.598	93.289
0.696	14.704	18.425	63.741	5.065	79.978	243.763	93.322
0.760	15.326	19.438	65.099	6.332	79.433	245.663	93.333
0.823	15.926	20.514	66.487	8.864	78.544	247.132	93.333
0.886	16.495	21.654	67.898	12.663	77.589		
1.013	17.580	22.857	69.325	15.829	77.033		
1.140	18.589	24.123	70.759	18.995	76.656		
1.266	19.537	25.453	72.200	22.160	76.433		
1.393	20.432	26.846	73.649	25.326	76.344		
1.520	21.290	28.302	75.091	25.681	76.344		
1.646	22.102	29.885	76.586	28.492	76.356		
1.773	22.883	31.531	78.073	31.658	76.378		
1.899	23.627	33.240	79.530	34.823	76.433		
2.089	24.697	35.013	80.971	37.989	76.500		
2.279	25.713	36.913	82.428	44.321	76.689		
2.469	26.684	38.876	83.847	50.652	76.944		
2.659	27.610	40.965	85.273	56.984	77.267		
2.849	28.490	43.181	86.684	63.315	77.644		
3.039	29.347	45.460	88.042	69.647	78.089		
3.292	30.440	47.866	89.370	75.978	78.578		
3.546	31.480	50.399	90.660	82.310	79.111		
3.799	32.473	53.058	91.904	88.641	79.678		
4.052	33.429	55.844	93.088	94.973	80.289		
4.369	34.583	58.820	94.226	101.304	80.933		
4.685	35.683	61.922	95.281	107.636	81.600		
5.002	36.730	65.215	96.252	113.967	82.289		
5.318	37.747	68.634	97.117	120.299	83.000		
5.698	38.915	72.243	97.883	126.630	83.722		
6.078	40.038	76.042	98.536	132.962	84.444		
6.458	41.115	80.030	99.067	139.293	85.167		
6.901	42.322	84.209	99.476	145.625	85.900		
7.345	43.475	88.578	99.757	151.956	86.611		
7.788	44.590	93.200	99.924	158.288	87.322		
8.294	45.819	98.012	99.992	164.619	88.011		
8.801	46.995	100.000	100.000	170.951	88.689		
9.307	48.126			177.283	89.333		

Table 1. Continued

(b) Cowl B

[Nondimensionalized coordinates in percent]

External Coordinates				Internal Coordinates			
X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	r/r_{max}	X/L	r/r_{max}
0.000	0.000	41.003	78.073	0.000	85.356	165.962	90.856
0.013	1.290	42.003	78.832	0.038	84.867	172.293	91.467
0.025	2.276	43.004	79.590	0.152	84.378	178.625	92.000
0.063	3.338	44.004	80.349	0.342	83.889	184.956	92.456
0.127	4.704	45.004	81.032	0.608	83.411	191.288	92.833
0.203	5.842	46.005	81.715	0.937	82.933	197.619	93.100
0.405	8.270	47.005	82.398	1.342	82.467	203.951	93.278
0.595	10.091	48.006	83.080	1.823	82.011	210.282	93.333
0.798	11.684	49.006	83.763	2.381	81.556		
1.000	13.050	49.994	84.446	3.001	81.122		
1.494	15.933	51.994	85.660	3.685	80.689		
2.001	18.361	53.995	86.874	4.432	80.278		
2.495	20.561	55.996	87.936	5.255	79.878		
3.001	22.534	57.997	89.074	6.129	79.500		
3.495	24.279	59.997	90.061	7.053	79.133		
4.002	25.948	61.998	91.047	8.041	78.789		
4.495	27.542	63.999	91.958	9.079	78.467		
5.002	28.983	66.000	92.792	10.168	78.156		
6.002	31.715	68.001	93.627	11.308	77.867		
7.003	34.219	70.001	94.385	12.473	77.611		
8.003	36.495	72.002	95.144	13.689	77.367		
9.003	38.695	74.003	95.751	14.942	77.144		
10.004	40.744	76.004	96.434	16.221	76.956		
11.004	42.640	78.004	96.965	17.538	76.789		
12.005	44.461	80.005	97.496	18.868	76.644		
13.005	46.206	82.006	97.951	20.223	76.522		
14.005	47.876	83.994	98.407	21.590	76.433		
15.006	49.469	85.995	98.786	22.971	76.367		
16.006	51.062	87.995	99.090	24.364	76.322		
16.994	52.504	89.996	99.393	25.757	76.311		
17.994	53.945	91.997	99.621	26.668	76.311		
18.995	55.387	93.998	99.772	33.000	76.389		
19.995	56.677	95.998	99.924	39.331	76.578		
20.995	58.042	97.999	100.000	45.663	76.867		
21.996	59.256	100.000	100.000	51.994	77.244		
22.996	60.546			58.326	77.711		
23.996	61.684			64.657	78.267		
24.997	62.898			70.989	78.878		
25.997	64.036			77.321	79.556		
26.998	65.099			83.652	80.289		
27.998	66.161			89.984	81.067		
28.998	67.223			96.315	81.878		
29.999	68.285			102.647	82.711		
30.999	69.272			108.978	83.578		
31.999	70.258			115.310	84.444		
33.000	71.168			118.020	84.822		

Table 1. Continued

(c) Cowls C and D

[Nondimensionalized coordinates in percent]

External Coordinates						Internal Coordinates			
X/L	$\frac{r - r_h}{r_{max} - r_h}$	$\frac{r - r_h}{r_{max} - r_h}$	X/L	$\frac{r - r_h}{r_{max} - r_h}$	$\frac{r - r_h}{r_{max} - r_h}$	X/L	r/r_{max}	X/L	r/r_{max}
	Cowl C	Cowl D		Cowl C	Cowl D				
0.000	0.000	0.000	67.000	94.605	92.662	0.000	85.358	66.920	80.074
0.020	1.996	1.540	70.000	95.652	93.952	0.020	84.998	71.851	80.782
0.080	3.984	3.058	73.000	96.578	95.121	0.082	84.637	77.276	81.587
0.180	5.949	4.545	76.000	97.397	96.160	0.186	84.277	83.242	82.493
0.320	7.892	6.002	79.000	98.103	97.071	0.330	83.917	89.805	83.506
0.501	9.797	7.429	82.000	98.710	97.868	0.519	83.556	97.026	84.621
0.723	11.671	8.848	85.000	99.211	98.543	0.751	83.196	104.966	85.832
0.985	13.515	10.290	88.000	99.605	99.105	1.027	82.834	113.702	87.122
1.288	15.321	11.777	91.000	99.856	99.537	1.350	82.474	123.312	88.462
1.633	17.097	13.295	94.000	99.970	99.848	1.721	82.114	133.881	89.807
2.021	18.850	14.858	97.000	100.000	99.962	2.144	81.753	145.509	90.088
2.450	20.595	16.459	100.000	100.000	100.000	2.619	81.393	158.298	92.206
2.923	22.333	18.091				3.150	81.032	172.368	93.019
3.439	24.078	19.768				3.744	80.672	187.468	93.333
4.000	25.854	21.490				4.403	80.312	191.205	93.333
4.607	27.667	23.243				5.135	79.951		
5.259	29.542	25.042				5.946	79.591		
5.958	31.446	26.871				6.849	79.230		
6.705	33.381	28.745				7.857	78.870		
7.501	35.332	30.650				8.988	78.510		
8.348	37.297	32.592				10.269	78.149		
9.247	39.270	34.558				11.809	77.773		
10.200	41.266	36.553				13.350	77.453		
11.208	43.269	38.579				14.890	77.180		
12.273	45.280	40.621				16.431	76.951		
13.397	47.306	42.677				17.971	76.762		
14.583	49.340	44.650				19.512	76.610		
15.833	51.389	46.638				21.051	76.494		
17.150	53.445	48.642				22.593	76.412		
18.538	55.517	50.660				24.132	76.363		
20.000	57.604	52.701				25.673	76.347		
21.540	59.690	54.773				26.479	76.350		
23.162	61.800	56.868				27.366	76.360		
24.873	63.910	58.992				28.341	76.377		
26.679	66.034	61.140				29.415	76.403		
28.586	68.174	63.325				30.595	76.441		
30.603	70.322	65.541				31.893	76.491		
32.739	72.477	67.795				33.322	76.556		
35.008	74.640	70.079				34.893	76.640		
37.422	76.810	72.393				36.621	76.744		
40.000	78.988	74.746				38.523	76.876		
43.000	81.348	77.326				40.614	77.036		
46.000	83.533	79.731				42.915	77.229		
49.000	85.559	81.978				45.445	77.463		
52.000	87.426	84.102				48.228	77.742		

Table 1. Continued

(d) Cowl E

[Nondimensionalized coordinates in percent]

External Coordinates				Internal Coordinates			
X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	r/r_{max}	X/L	r/r_{max}
0.000	0.000	32.000	70.185	0.000	88.000	123.736	85.856
0.014	1.296	33.000	71.204	0.042	87.500	125.042	86.011
0.028	2.222	34.000	72.130	0.167	86.989	130.681	86.656
0.069	3.333	35.000	73.056	0.389	86.489	137.625	87.433
0.125	4.722	36.000	73.889	0.681	86.000	144.569	88.211
0.194	5.833	37.000	74.815	1.056	85.511	151.514	88.967
0.403	8.241	38.000	75.648	1.528	85.022	158.458	89.678
0.597	10.093	39.000	76.481	2.069	84.544	165.403	90.356
0.806	11.667	40.000	77.222	2.694	84.089	172.347	90.989
1.000	13.056	41.000	78.056	3.389	83.633	179.292	91.556
1.500	15.926	42.000	78.796	4.167	83.189	186.236	92.067
2.000	18.426	43.000	79.537	5.028	82.767	193.181	92.500
2.500	20.556	44.000	80.278	5.944	82.356	200.125	92.856
3.000	22.500	45.000	81.019	6.931	81.967	207.069	93.111
3.500	24.259	46.000	81.759	7.986	81.589	214.014	93.278
4.000	25.926	47.000	82.407	9.097	81.233	220.958	93.333
4.500	27.500	48.000	83.148	10.278	80.900		
5.000	28.981	49.000	83.796	11.500	80.578		
6.000	31.667	50.000	84.444	12.792	80.289		
7.000	34.167	52.000	85.648	14.111	80.011		
8.000	36.481	53.306	86.852	15.486	79.767		
9.000	38.704	56.000	87.963	16.903	79.544		
10.000	40.741	58.000	89.074	18.347	79.344		
11.000	42.593	60.000	90.093	19.833	79.167		
12.000	44.444	62.000	91.019	21.347	79.022		
13.000	46.204	64.000	91.944	22.875	78.900		
14.000	47.870	66.000	92.778	24.431	78.800		
15.000	49.537	68.000	93.611	25.986	78.733		
16.000	51.019	70.000	94.352	27.556	78.689		
17.000	52.500	71.306	95.093	29.139	78.678		
18.000	53.981	74.000	95.741	29.139	78.678		
19.000	55.370	76.000	96.389	33.458	78.700		
20.000	56.667	78.000	96.944	40.403	78.822		
21.000	58.056	80.000	97.500	47.347	79.044		
22.000	59.259	82.000	97.963	54.292	79.367		
23.000	60.556	84.000	98.426	61.236	79.767		
24.000	61.667	86.000	98.796	68.181	80.256		
25.000	62.870	88.000	99.074	75.125	80.800		
26.000	63.981	90.000	99.352	82.069	81.411		
27.000	65.093	92.000	99.630	89.014	82.067		
28.000	66.204	94.000	99.815	95.958	82.778		
29.000	67.222	96.000	99.907	102.903	83.511		
30.000	68.241	98.000	100.000	109.847	84.278		
31.000	69.259	100.000	100.000	116.792	85.067		

Table 1. Concluded

(e) Cowl F

[Nondimensionalized coordinates in percent]

External Coordinates				Internal Coordinates			
X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	$\frac{r - r_h}{r_{max} - r_h}$	X/L	r/r_{max}	X/L	r/r_{max}
0.000	0.000	21.540	59.694	0.000	88.000	30.774	78.722
0.019	2.000	23.163	61.796	0.024	87.629	32.689	78.759
0.081	3.981	24.874	63.907	0.093	87.257	34.797	78.823
0.181	5.954	26.679	66.037	0.210	86.886	37.115	78.920
0.321	7.889	28.586	68.176	0.374	86.513	39.665	79.054
0.501	9.778	30.603	70.315	0.586	86.142	42.471	79.232
0.722	11.676	32.739	72.472	0.849	85.770	45.557	79.460
0.985	13.509	35.008	74.639	1.161	85.399	48.951	79.747
1.289	15.315	37.422	76.806	1.526	85.027	52.685	80.099
1.633	17.093	40.000	78.991	1.946	84.656	56.792	80.526
2.021	18.852	43.000	81.352	2.424	84.284	61.310	81.034
2.450	20.593	46.000	83.537	2.961	83.912	66.281	81.636
2.922	22.333	49.000	85.556	3.563	83.541	71.747	82.336
3.439	24.074	52.000	87.426	4.233	83.169	77.760	83.141
4.000	25.852	55.000	89.139	4.979	82.798	84.375	84.056
4.606	27.667	58.000	90.704	5.806	82.426	91.651	85.079
5.258	29.537	61.000	92.139	6.725	82.054	99.656	86.204
5.957	31.444	64.000	93.435	7.746	81.683	108.460	87.417
6.704	33.380	67.000	94.602	8.885	81.311	118.144	88.688
7.501	35.324	70.000	95.648	10.163	80.940	128.797	89.973
8.349	37.296	73.000	96.583	11.613	80.568	140.517	91.204
9.247	39.269	76.000	97.398	13.354	80.181	153.407	92.280
10.200	41.259	78.722	98.102	15.096	79.850	167.586	93.056
11.208	43.269	82.000	98.713	16.838	79.569	181.908	93.333
12.274	45.278	85.000	99.213	18.581	79.333	186.111	93.333
13.397	47.306	88.000	99.602	20.322	79.138		
14.583	49.343	91.000	99.852	22.064	78.981		
15.833	51.389	94.000	99.972	23.806	78.862		
17.151	53.444	97.000	100.000	25.547	78.777		
18.539	55.519	100.000	100.000	27.289	78.727		
20.000	57.602			29.031	78.710		

Table 2. Tabular and Graphical Pressure Coefficient Data Presentation for Cowl A

M	mfr	α,deg	Table	Figure
0.60	0.26	0	6(a)	7(a)
	0.32	↓	↓	↓
	0.51	↓	↓	↓
	0.60	-2		8(a)
	↓	0		7(a),8(a)
	↓	2		8(a)
	↓	4		8(a)
	0.65	0		7(a)
	0.70	-2		8(a)
	↓	0		7(a),8(a)
	↓	2		8(a)
	↓	4.1		8(a)
	0.75	0		7(a)
↓	0.79	0	↓	7(a)
0.69	0.26	0	6(b)	7(a)
↓	0.32	↓	↓	↓
	0.51	↓	↓	↓
	0.60	↓	↓	↓
	0.64	↓	↓	↓
	0.69	-2		8(b)
	↓	0		7(a),8(b)
	↓	2.1		8(b)
	↓	4.1		8(b)
	0.74	0		7(a)
↓	0.79	0	↓	7(a)
0.74	0.32	0	6(c)	7(b)
↓	0.50	0	↓	7(b)
	0.60	-2		8(b)
	↓	0		7(b),8(b)
	↓	2		8(b)
	↓	4.1		8(b)
	0.64	0		7(b)
	0.69	-2		8(c)
	↓	0		7(b),8(c)
	↓	2.1		8(c)
	↓	4.1		8(c)
	0.73	0		7(b)
↓	0.79	0	↓	7(b)
0.77	0.50	-2.1	6(d)	8(c)
↓	↓	0	↓	7(b),8(c)
	↓	2		8(c)
	↓	4.1		8(c)
	0.59	-2		8(d)
	↓	0		7(b),8(d)
	↓	2		8(d)
	↓	4.1		8(d)
↓	0.64	-2	↓	-

M	mfr	α,deg	Table	Figure
0.77	0.64	0	6(d)	7(b)
↓	↓	2.1	↓	-
	↓	4.1		-
	0.69	-2.1		8(d)
	↓	0		7(b).8(d)
	↓	2		8(d)
	↓	4.1		8(d)
	0.73	-2		-
	↓	0		7(b)
	↓	2		-
	↓	4.1		-
	0.79	-2		8(e)
	↓	0		7(b),8(e)
	↓	2		8(e)
↓	↓	4.1	↓	8(e)
0.79	0.50	0	6(e)	7(c)
↓	0.59	-2.1	↓	8(e)
	↓	0		7(c),8(e)
	↓	2.1		8(e)
	↓	4.1		8(e)
	0.64	0		7(c)
	0.69	-2.1		8(f)
	↓	0		7(c),8(f)
	↓	2.1		8(f)
	↓	4.1		8(f)
↓	0.73	0	↓	7(c)
	0.79	0		7(c)
0.81	0.50	-2	6(f)	8(f)
↓	↓	0	↓	7(c),8(f)
	↓	2		8(f)
	↓	4.1		8(f)
	0.59	-2		8(g)
	↓	0		7(c),8(g)
	↓	2.1		8(g)
	↓	4.1		8(g)
	0.64	-2.1		-
	↓	0		7(c)
	↓	2		-
	↓	4.1		-
	0.69	-2.1		8(g)
	↓	0		7(c),8(g)
	↓	2.1		8(g)
	↓	4.1		8(g)
	0.73	-2.1		-
	↓	0		7(c)
	↓	2.1		-
↓	↓	4.1	↓	-

Table 2. Concluded

M	mfr	α,deg	Table	Figure
0.81	0.79	-2	6(f)	8(h)
↓	↓	0	↓	7(c),8(h)
↓	↓	2.1	↓	8(h)
↓	↓	4.1	↓	8(h)
0.83	0.59	-2.1	6(g)	8(h)
↓	↓	0	↓	7(d),8(h)
↓	↓	2	↓	8(h)
↓	↓	4.1	↓	8(h)
↓	0.64	0	↓	7(d)
↓	0.69	-2	↓	8(i)
↓	↓	0	↓	7(d),8(i)
↓	↓	2.1	↓	8(i)
↓	↓	4.1	↓	8(i)
↓	0.73	0	↓	7(d)
↓	0.79	0	↓	7(d)
0.85	0.60	-2	6(h)	8(i)
↓	↓	0	↓	7(d), 8(i)
↓	↓	2.1	↓	8(i)
↓	↓	4.1	↓	8(i)
↓	0.65	0	↓	7(d)
↓	0.69	-2	↓	8(j)
↓	↓	0	↓	7(d),8(j)
↓	↓	2.1	↓	8(j)
↓	↓	4.1	↓	8(j)
↓	0.73	0	↓	7(d)
↓	0.79	0	↓	7(d)
0.87	0.64	0	6(i)	7(e)
↓	0.69	-2.1	↓	8(j)
↓	↓	0	↓	7(e),8(j)
↓	↓	2.1	↓	8(j)
↓	↓	4.1	↓	8(j)
↓	0.74	0	↓	7(e)
↓	0.79	0	↓	8(e)
0.89	0.69	0	6(j)	7(e)
↓	0.74	↓	↓	↓
↓	0.79	↓	↓	↓
0.91	0.74	0	6(k)	7(e)
0.91	0.79	0	6(k)	7(e)

Table 3. Tabular and Graphical Pressure Coefficient Data Presentation for Cowl B

M	mfr	α,deg	Table	Figure
0.60	0.28	0	7(a)	9(a)
	0.38			9(a)
	0.52			9(a),10(a)
		1		10(a)
		2		
		3		
	0.57	0		9(a)
	0.62	0		9(a),10(a)
		1		10(a)
		2		10(a)
		3		10(a)
	0.65	0		9(a)
	0.71	0		9(a),10(b)
		1		10(b)
		2		10(b)
		3		10(b)
	0.74	0		9(a)
	0.79	0		9(a),10(b)
		1		10(b)
		2		
		3		
0.69	0.27	0	7(b)	9(a)
	0.39			
	0.52			
	0.56			
	0.61			
	0.64			
	0.70			
	0.74			
	0.79			
0.74	0.52	0	7(c)	9(b)
	0.56	0.1		
	0.61	0		
	0.64			
	0.70			
	0.74			
	0.79			
0.77	0.29	0	7(d)	9(b)
	0.38			9(b)
	0.52			9(b),10(c)
		1		10(c)
		2.1		
		3.1		
	0.56	0.1		9(b)
	0.62	0		9(b),10(c)
		1.1		10(c)
		2		10(c)

M	mfr	α,deg	Table	Figure
0.77	0.62	3.1	7(d)	10(c)
	0.65	0		9(b)
	0.69	0		9(b),10(d)
		1		10(d)
		2		
		3.1		
	0.74	0		9(b)
	0.79	0		9(b),10(d)
		1		10(d)
		2		
		3.1		
0.79	0.29	0	7(e)	9(c)
	0.38			
	0.52			
	0.56			
	0.62			
	0.64			
	0.69			
	0.74			
	0.79			
0.82	0.29	0	7(f)	9(c)
	0.38			9(c)
	0.52			9(c),10(e)
		1.1		10(e)
		2		
		3.1		
	0.56	0		9(c)
	0.61	0		9(c),10(e)
		1.1		10(e)
		2		
		3.1		
	0.64	0		9(c)
	0.69	0		9(c),10(f)
		1		10(f)
		2.1		
		3.1		
	0.74	0		9(c)
	0.79	0		9(c),10(f)
		1		10(f)
		2		
		3.1		
0.84	0.29	0	7(g)	9(d)
	0.38			
	0.50			
	0.52			10(g)
		1		
		2.1		

Table 3. Concluded

M	mfr	α,deg	Table	Figure
0.84	0.52	3.1	7(g)	10(g)
	0.56	0		9(d)
	0.61	0.1		9(d),10(g)
		1		10(g)
		2		
		3.1		
	0.64	0		9(d)
	0.69	0		9(d),10(h)
		1		10(h)
		2.1		
		3.1		
	0.74	0		9(d)
	0.79	0		9(d),10(h)
		1		10(h)
		2.1		
		3.1		
0.87	0.52	0	7(h)	9(d)
	0.56	0.1		
	0.61	0		
	0.64			
	0.69			
	0.74			
	0.79			
0.89	0.28	0	7(i)	9(e)
	0.39			
	0.52			
	0.56			
	0.61			
	0.65			
	0.70			
	0.74			
	0.79			

Table 4. Concluded

M	mfr	α,deg	Table	Figure
0.84	0.74	1	8(g)	12(g)
		2.1		
		3.1		
	0.80	0		11(d),12(g)
		1		12(g)
		2.1		
		3.1		
0.89	0.30	0	8(h)	11(d)
	0.43	-0.1		
	0.54	0		
	0.60			
	0.65			
	0.70			
	0.74			
	0.79			

Table 4. Tabular and Graphical Pressure Coefficient Data Presentation for Cowl E

M	mfr	α,deg	Table	Figure
0.60	0.28	0	8(a)	11(a)
	0.43			
	0.49			
	0.54			11(a),12(a)
		1		12(a)
		2		
		3		
	0.60	0		11(a)
	0.65	0		11(a),12(a)
		1		12(a)
		2		
		3		
	0.70	0		11(a)
	0.75	0		11(a),12(b)
		1		12(b)
		2		
		3		
	0.80	0		11(a)
0.69	0.27	0	8(b)	11(a)
	0.43			
	0.49			
	0.54			
	0.59			
	0.64			
	0.69			
	0.75			
	0.79			
0.74	0.54	0	8(c)	11(b)
	0.59			
	0.64			
	0.69			
	0.74			
	0.79			
0.77	0.27	0	8(d)	11(b)
	0.43	-0.1		
	0.49	0		
	0.54	0		11(b),12(b)
		1		12(b)
		2		
		3		
	0.59	0		11(b)
	0.65	0		11(b),12(c)
		1		12(c)
		2		
		3		
	0.69	0		11(b)
	0.74	0		11(b),12(c)

M	mfr	α,deg	Table	Figure
0.77	0.74	1	8(d)	12(c)
		2.1		
		3		
	0.79	0		11(b)
0.79	0.27	-0.1	8(e)	11(c)
	0.43	-0.1		
	0.49	0		
	0.54			
	0.59			
	0.65			
	0.70			
	0.74			
	0.79			
0.82	0.30	-0.1	8(f)	11(c)
	0.43	-0.1		
	0.49	0		
	0.54	0		11(c),12(d)
		1		12(d)
		2		
		3		
	0.59	0		11(c)
	0.65	0		11(c),12(d)
		1		12(d)
		2		
		3.1		
	0.70	0		11(c)
	0.74	0		11(c),12(e)
		1		12(e)
		2		
		3		
	0.80	0		11(c),12(e)
		1		12(e)
		2		
		3.1		
0.84	0.29	0	8(g)	11(d)
	0.43	-0.1		
	0.49	0		
	0.54	0		11(d),12(f)
		1		12(f)
		2		12(f)
	0.60	0		11(d)
	0.65	0		11(d),12(f)
		1		12(f)
		2.1		
		3		
	0.70	0		11(d)
	0.74	0		11(d),12(g)

Table 5. Tabular and Graphical Pressure Coefficient Data Presentation for Cowl F

M	mfr	α,deg	Table	Figure
0.60	0.26	0	9(a)	13(a),14(a)
	0.26	2		14(a)
	0.31	0		13(a)
	0.39			
	0.45			
	0.49			13(a),14(a)
		1		14(a)
		2		
		3		
	0.53	0		13(a)
	0.59			13(a)
	0.65			13(a),14(b)
		1		14(b)
		2		14(b)
	0.71	0		13(a)
	0.77	0		13(a),14(b)
	0.77	2		14(b)
	0.83	0		13(a)
	0.89	0		13(a)
0.64	0.26	0	9(b)	13(a)
	0.31			
	0.40			
	0.45			
	0.53			
	0.59			
	0.65			
	0.70			
	0.77			
	0.83			
	0.89			
0.70	0.26	0	9(c)	13(b)
	0.31			
	0.40			
	0.45			
	0.46			13(b),14(c)
	0.46	2.1		14(c)
	0.52	0		13(b)
	0.59			
	0.65			
	0.70			
	0.77			
	0.82			
0.72	0.26	0	9(d)	13(b)
	0.31			
	0.39			
	0.45			
	0.52			

M	mfr	α,deg	Table	Figure
0.72	0.59	0	9(d)	13(b)
	0.65			
	0.70			
	0.76			
	0.83			
0.74	0.26	0	9(e)	13(c)
	0.31			
	0.39			
	0.45			
	0.52			
	0.59			
	0.65			
	0.70			
	0.76			
	0.83			
0.77	0.26	0	9(f)	13(c)
	0.31			
	0.39			
	0.44			
	0.46			
	0.52			
	0.59			
	0.65			
	0.70			
	0.76			
0.79	0.26	0	9(g)	13(d)
	0.31			
	0.39			
	0.45			
	0.47			13(d),14(c)
	0.47	2.1		14(c)
	0.52	0		13(d)
	0.59			
	0.64			
	0.70			
	0.76			
0.82	0.26	0	9(h)	13(d)
	0.31			
	0.39			
	0.45			
	0.52			
	0.58			
	0.64			
	0.70	0.1		
	0.76	0		
0.84	0.26	0	9(i)	13(e),14(d)
0.84	0.26	1	9(i)	14(d)

Table 5. Concluded

M	mfr	α,deg	Table	Figure
0.84	0.26	2	9(i)	14(d)
	0.26	3		14(d)
	0.31	0		13(e)
	0.39			
	0.44			
	0.47			13(e),14(d)
		1		14(d)
		2.1		
		3.1		
	0.52	0		13(e)
	0.58	0.1		13(e)
	0.64	0		13(e),14(e)
		1		14(e)
		2.1		
		3.1		
	0.70	0		13(e)
	0.76	0		13(e),14(e)
		1		14(e)
		2.1		
		3.1		
0.87	0.25	0	9(j)	13(e)
	0.31			
	0.38			
	0.45			
	0.47			13(e),14(f)
	0.47	2.1		14(f)
	0.52	0		13(e)
	0.58			
	0.64			
	0.70	0.1		
	0.76	0		
0.89	0.26	0	9(k)	13(f)
	0.31			
	0.38			
	0.44			
	0.47			13(f),14(f)
	0.47	2.1		14(f)
	0.52	0		13(f)
	0.64			
	0.70			
	0.76			
0.92	0.26	0	9(l)	13(f),14(g)
	0.26	2.1		14(g)
	0.31	0		13(f)
	0.38			
	0.44			
	0.47	-1.0		14(g)

M	mfr	α,deg	Table	Figure
0.92	0.47	0	9(l)	13(f),14(g)
		1		14(g)
		2.1		
		3.1		
	0.52	0		13(f)
	0.58			13(f)
	0.64			13(f),14(h)
	0.64	2.1		14(h)
	0.70	0		13(f)
	0.76	0		13(f),14(h)
	0.76	2.1		14(h)

Table 6. Pressure coefficients on cowl A

(a) M = 0.60

M = 0.595

mfr = 0.262 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	1.0116	-25.00	1.0116
-15.00	1.0481	-10.00	1.0763
-10.00	1.0772	-4.00	1.0472
-6.00	1.0861	0.00	-0.5861
-4.00	1.0500	1.00	-2.1416
-2.00	0.9085	4.00	-2.3110
-1.00	0.6002	10.00	-1.7912
0.00	-0.4507		
0.25	-1.4936		
1.00	-2.2149		
2.00	-2.5281		
4.00	-2.3775		
6.00	-2.2894		
10.00	-1.7436		
12.50	-1.4326		
15.00	-1.2268		
20.00	-1.0881		
30.00	-0.7394		
40.00	-0.6120		
45.00	-0.5426		
50.00	-0.4953		
55.00	-0.4744		
60.00	-0.4346		
70.00	-0.3825		
80.00	-0.3271		
90.00	-0.2825		
100.00	-0.2319		
120.00	-0.1674		

M = 0.596

mfr = 0.317 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.9621	-25.00	0.9645
-15.00	1.0055	-10.00	1.0526
-10.00	1.0587	-4.00	1.0779
-6.00	1.0891	0.00	-0.3946
-4.00	1.0821	1.00	-1.9738
-2.00	0.9833	4.00	-2.3797
-1.00	0.7308	10.00	-1.6598
0.00	-0.2599		
0.25	-1.2577		
1.00	-1.9819		
2.00	-2.4060		
4.00	-2.4604		
6.00	-2.2885		
10.00	-1.5799		
12.50	-1.1628		
15.00	-0.9452		
20.00	-0.8231		
30.00	-0.6638		
40.00	-0.5635		
45.00	-0.5265		
50.00	-0.4857		
55.00	-0.4567		
60.00	-0.4229		
70.00	-0.3698		
80.00	-0.3216		
90.00	-0.2728		
100.00	-0.2191		
120.00	-0.1596		

M = 0.597

mfr = 0.509 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.6703	-25.00	0.6799
-15.00	0.7169	-10.00	0.8189
-10.00	0.8224	-4.00	1.0285
-6.00	0.9418	0.00	0.2850
-4.00	1.0353	1.00	-1.0068
-2.00	1.0909	4.00	-1.6528
-1.00	1.0302	10.00	-1.0599
0.00	0.3976		
0.25	-0.4935		
1.00	-1.1375		
2.00	-1.6144		
4.00	-1.5655		
6.00	-1.3709		
10.00	-0.9741		
12.50	-0.9031		
15.00	-0.7729		
20.00	-0.6937		
30.00	-0.5690		
40.00	-0.4924		
45.00	-0.4726		
50.00	-0.4175		
55.00	-0.4025		
60.00	-0.3726		
70.00	-0.3228		
80.00	-0.2810		
90.00	-0.2361		
100.00	-0.1884		
120.00	-0.1312		

M = 0.595

mfr = 0.605 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.3687	-25.00	0.5076
-15.00	0.3617	-10.00	0.6918
-10.00	0.4961	-4.00	0.9751
-6.00	0.6362	0.00	0.4019
-4.00	0.7997	1.00	-0.8768
-2.00	0.9899	4.00	-1.7385
-1.00	1.0793	10.00	-1.1000
0.00	0.8429		
0.25	0.2666		
1.00	-0.2426		
2.00	-0.6400		
4.00	-0.7679		
6.00	-0.7931		
10.00	-0.6604		
12.50	-0.5670		
15.00	-0.5294		
20.00	-0.5090		
30.00	-0.4386		
40.00	-0.3871		
45.00	-0.3774		
50.00	-0.3441		
55.00	-0.3419		
60.00	-0.3017		
70.00	-0.2678		
80.00	-0.2442		
90.00	-0.1958		
100.00	-0.1572		
120.00	-0.1072		

M = 0.597

mfr = 0.605 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.4092	-25.00	0.4435
-15.00	0.4774	-10.00	0.5947
-10.00	0.5899	-4.00	0.8927
-6.00	0.7744	0.00	0.5916
-4.00	0.9084	1.00	-0.5699
-2.00	1.0418	4.00	-1.2387
-1.00	1.0891	10.00	-0.9415
0.00	0.6448		
0.25	-0.0212		
1.00	-0.6691		
2.00	-1.0808		
4.00	-1.1475		
6.00	-1.0227		
10.00	-0.8287		
12.50	-0.7719		
15.00	-0.6718		
20.00	-0.6102		
30.00	-0.5080		
40.00	-0.4464		
45.00	-0.4335		
50.00	-0.3768		
55.00	-0.3784		
60.00	-0.3350		
70.00	-0.3029		
80.00	-0.2568		
90.00	-0.2215		
100.00	-0.1755		
120.00	-0.1187		

M = 0.596

mfr = 0.605 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.4954	-25.00	0.3692
-15.00	0.5586	-10.00	0.5056
-10.00	0.7049	-4.00	0.8104
-6.00	0.8404	0.00	0.7904
-4.00	0.9760	1.00	-0.2704
-2.00	1.0760	4.00	-0.7966
-1.00	1.0634	10.00	-0.7586
0.00	0.4604		
0.25	-0.3456		
1.00	-1.0240		
2.00	-1.4234		
4.00	-1.6282		
6.00	-1.3484		
10.00	-1.0439		
12.50	-0.9194		
15.00	-0.7963		
20.00	-0.6986		
30.00	-0.5784		
40.00	-0.4963		
45.00	-0.4652		
50.00	-0.4320		
55.00	-0.4142		
60.00	-0.3772		
70.00	-0.3322		
80.00	-0.2860		
90.00	-0.2377		
100.00	-0.1889		
120.00	-0.1288		

M = 0.597

mfr = 0.606 and α = 4.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.5447	-25.00	0.3020
-15.00	0.6381	-10.00	0.3682
-10.00	0.7828	-4.00	0.6826
-6.00	0.9162	0.00	0.9477
-4.00	1.0407	1.00	0.0334
-2.00	1.0899	4.00	-0.4447
-1.00	1.0312	10.00	-0.5494
0.00	0.3113		
0.25	-0.5952		
1.00	-1.3304		
2.00	-1.8123		
4.00	-2.0738		
6.00	-1.9177		
10.00	-1.2830		
12.50	-0.9990		
15.00	-0.9049		
20.00	-0.7944		
30.00	-0.6391		
40.00	-0.5449		
45.00	-0.5058		
50.00	-0.4619		
55.00	-0.4394		
60.00	-0.4014		
70.00	-0.3543		
80.00	-0.3040		
90.00	-0.2510		
100.00	-0.2006		
120.00	-0.1332		

M = 0.594

mfr = 0.654 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.2955	-25.00	0.3057
-15.00	0.3203	-10.00	0.4541
-10.00	0.4652	-4.00	0.8380
-6.00	0.6420	0.00	0.7659
-4.00	0.8155	1.00	-0.3870
-2.00	1.0278	4.00	-1.0120
-1.00	1.0875	10.00	-0.8393
0.00	0.7699		
0.25	0.2114		
1.00	-0.3830		
2.00	-0.8558		
4.00	-0.9249		
6.00	-0.9303		
10.00	-0.8062		
12.50	-0.6727		
15.00	-0.6167		
20.00	-0.5677		
30.00	-0.4929		
40.00	-0.4261		
45.00	-0.4003		
50.00	-0.3836		
55.00	-0.3636		
60.00	-0.3373		
70.00	-0.2947		
80.00	-0.2592		
90.00	-0.2140		
100.00	-0.1671		
120.00	-0.1235		

Table 6. Continued

(a) Concluded

M = 0.595

mfr = 0.701 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.0578	-25.00	0.2236
-15.00	0.0015	-10.00	0.4444
-10.00	0.1565	-4.00	0.8256
-6.00	0.3921	0.00	0.6979
-4.00	0.5554	1.00	-0.4910
-2.00	0.8018	4.00	-1.2010
-1.00	0.9967	10.00	-0.9642
0.00	0.9667		
0.25	0.5711		
1.00	0.0530		
2.00	-0.3677		
4.00	-0.5528		
6.00	-0.5044		
10.00	-0.4689		
12.50	-0.4339		
15.00	-0.4344		
20.00	-0.4070		
30.00	-0.3688		
40.00	-0.3365		
45.00	-0.3274		
50.00	-0.3080		
55.00	-0.3064		
60.00	-0.2784		
70.00	-0.2424		
80.00	-0.2111		
90.00	-0.1805		
100.00	-0.1385		
120.00	-0.0906		

M = 0.596

mfr = 0.700 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1243	-25.00	0.1345
-15.00	0.1389	-10.00	0.3175
-10.00	0.2994	-4.00	0.6824
-6.00	0.5193	0.00	0.8691
-4.00	0.7051	1.00	-0.1756
-2.00	0.9326	4.00	-0.7741
-1.00	1.0653	10.00	-0.7663
0.00	0.8800		
0.25	0.3864		
1.00	-0.2251		
2.00	-0.5602		
4.00	-0.8129		
6.00	-0.7562		
10.00	-0.6753		
12.50	-0.6721		
15.00	-0.5463		
20.00	-0.5222		
30.00	-0.4564		
40.00	-0.4034		
45.00	-0.3862		
50.00	-0.3595		
55.00	-0.3418		
60.00	-0.3236		
70.00	-0.2754		
80.00	-0.2443		
90.00	-0.1983		
100.00	-0.1587		
120.00	-0.1089		

M = 0.597

mfr = 0.700 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2027	-25.00	0.0658
-15.00	0.2589	-10.00	0.1451
-10.00	0.4178	-4.00	0.5865
-6.00	0.6151	0.00	0.9661
-4.00	0.8263	1.00	0.1349
-2.00	1.0053	4.00	-0.4994
-1.00	1.0872	10.00	-0.5594
0.00	0.7164		
0.25	0.1380		
1.00	-0.5611		
2.00	-0.9723		
4.00	-1.1198		
6.00	-1.0823		
10.00	-0.8613		
12.50	-0.7988		
15.00	-0.6695		
20.00	-0.6167		
30.00	-0.5216		
40.00	-0.4645		
45.00	-0.4249		
50.00	-0.3881		
55.00	-0.3833		
60.00	-0.3550		
70.00	-0.3016		
80.00	-0.2588		
90.00	-0.2134		
100.00	-0.1686		
120.00	-0.1162		

M = 0.595

mfr = 0.700 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2683	-25.00	-0.0445
-15.00	0.3602	-10.00	0.0184
-10.00	0.5185	-4.00	0.3802
-6.00	0.7457	0.00	1.0330
-4.00	0.9095	1.00	0.3856
-2.00	1.0498	4.00	-0.2241
-1.00	1.0841	10.00	-0.3923
0.00	0.5742		
0.25	-0.1810		
1.00	-0.9327		
2.00	-1.4519		
4.00	-1.5519		
6.00	-1.3476		
10.00	-1.0483		
12.50	-0.9105		
15.00	-0.8173		
20.00	-0.7453		
30.00	-0.5920		
40.00	-0.4941		
45.00	-0.4693		
50.00	-0.4284		
55.00	-0.4123		
60.00	-0.3779		
70.00	-0.3252		
80.00	-0.2735		
90.00	-0.2300		
100.00	-0.1858		
120.00	-0.1213		

M = 0.596

mfr = 0.747 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.0540	-25.00	-0.0359
-15.00	-0.0796	-10.00	0.1252
-10.00	0.0863	-4.00	0.6104
-6.00	0.3940	0.00	0.9121
-4.00	0.5289	1.00	-0.0027
-2.00	0.8494	4.00	-0.6145
-1.00	1.0368	10.00	-0.6616
0.00	0.9525		
0.25	0.4615		
1.00	-0.0610		
2.00	-0.4495		
4.00	-0.6228		
6.00	-0.6571		
10.00	-0.6040		
12.50	-0.5498		
15.00	-0.5064		
20.00	-0.4699		
30.00	-0.4194		
40.00	-0.3744		
45.00	-0.3481		
50.00	-0.3239		
55.00	-0.3325		
60.00	-0.3078		
70.00	-0.2601		
80.00	-0.2300		
90.00	-0.1989		
100.00	-0.1522		
120.00	-0.0986		

M = 0.595

mfr = 0.793 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.3065	-25.00	-0.2491
-15.00	-0.2693	-10.00	-0.1114
-10.00	-0.0898	-4.00	0.3906
-6.00	0.1574	0.00	0.9948
-4.00	0.3901	1.00	0.1937
-2.00	0.7282	4.00	-0.5373
-1.00	0.9513	10.00	-0.5505
0.00	1.0015		
0.25	0.6447		
1.00	0.1339		
2.00	-0.2512		
4.00	-0.5048		
6.00	-0.5563		
10.00	-0.4575		
12.50	-0.4876		
15.00	-0.4634		
20.00	-0.4129		
30.00	-0.3898		
40.00	-0.3619		
45.00	-0.3399		
50.00	-0.3162		
55.00	-0.3152		
60.00	-0.2781		
70.00	-0.2566		
80.00	-0.2190		
90.00	-0.1771		
100.00	-0.1390		
120.00	-0.0944		

Table 6. Continued

(b) M = 0.69

M = 0.694

mfr = 0.259 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	1.0507	-25.00	1.0511
-15.00	1.0801	-10.00	1.1143
-10.00	1.1141	-4.00	1.0946
-6.00	1.1227	0.00	-0.3031
-4.00	1.0933	1.00	-1.5557
-2.00	0.9697	4.00	-1.7190
-1.00	0.7301	10.00	-1.4523
0.00	-0.1768		
0.25	-1.0498		
1.00	-1.4973		
2.00	-1.7451		
4.00	-1.7197		
6.00	-1.5994		
10.00	-1.3369		
12.50	-1.2386		
15.00	-1.2123		
20.00	-1.1606		
30.00	-1.1455		
40.00	-1.0076		
45.00	-0.7980		
50.00	-0.7049		
55.00	-0.7498		
60.00	-0.7213		
70.00	-0.4489		
80.00	-0.4059		
90.00	-0.3055		
100.00	-0.2853		
120.00	-0.1750		

M = 0.693

mfr = 0.325 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.9958	-25.00	0.9982
-15.00	1.0414	-10.00	1.0853
-10.00	1.0871	-4.00	1.1157
-6.00	1.1221	0.00	-0.1205
-4.00	1.1166	1.00	-1.4372
-2.00	1.0364	4.00	-1.9486
-1.00	0.8343	10.00	-1.9766
0.00	-0.0515		
0.25	-0.8343		
1.00	-1.4932		
2.00	-1.8289		
4.00	-1.9554		
6.00	-2.0289		
10.00	-1.9619		
12.50	-1.8997		
15.00	-1.8457		
20.00	-1.3454		
30.00	-0.8486		
40.00	-0.4861		
45.00	-0.4580		
50.00	-0.4291		
55.00	-0.4222		
60.00	-0.3960		
70.00	-0.3513		
80.00	-0.3113		
90.00	-0.2631		
100.00	-0.2154		
120.00	-0.1552		

M = 0.692

mfr = 0.505 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.7341	-25.00	0.7379
-15.00	0.7838	-10.00	0.8805
-10.00	0.8723	-4.00	1.0770
-6.00	0.9914	0.00	0.4116
-4.00	1.0667	1.00	-0.8267
-2.00	1.1242	4.00	-1.5390
-1.00	1.0759	10.00	-1.5812
0.00	0.4638		
0.25	-0.2097		
1.00	-0.8496		
2.00	-1.3404		
4.00	-1.5392		
6.00	-1.6020		
10.00	-1.5288		
12.50	-1.5085		
15.00	-1.3338		
20.00	-0.6621		
30.00	-0.5941		
40.00	-0.5196		
45.00	-0.4832		
50.00	-0.4447		
55.00	-0.4240		
60.00	-0.3925		
70.00	-0.3399		
80.00	-0.2882		
90.00	-0.2403		
100.00	-0.1812		
120.00	-0.1282		

M = 0.694

mfr = 0.598 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5035	-25.00	0.5122
-15.00	0.5666	-10.00	0.6680
-10.00	0.6877	-4.00	0.9657
-6.00	0.8047	0.00	0.6782
-4.00	0.9662	1.00	-0.4432
-2.00	1.0918	4.00	-1.2229
-1.00	1.1212	10.00	-1.3234
0.00	0.7141		
0.25	0.0979		
1.00	-0.5534		
2.00	-0.9091		
4.00	-1.2332		
6.00	-1.3316		
10.00	-1.2672		
12.50	-0.8350		
15.00	-0.7116		
20.00	-0.6513		
30.00	-0.5504		
40.00	-0.4832		
45.00	-0.4509		
50.00	-0.4217		
55.00	-0.4041		
60.00	-0.3706		
70.00	-0.3251		
80.00	-0.2732		
90.00	-0.2247		
100.00	-0.1780		
120.00	-0.1179		

M = 0.693

mfr = 0.639 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3675	-25.00	0.4023
-15.00	0.4152	-10.00	0.5522
-10.00	0.5594	-4.00	0.8893
-6.00	0.7351	0.00	0.7587
-4.00	0.8934	1.00	-0.3198
-2.00	1.0579	4.00	-1.0871
-1.00	1.1244	10.00	-1.0503
0.00	0.8220		
0.25	0.1785		
1.00	-0.3599		
2.00	-0.8076		
4.00	-1.0940		
6.00	-1.1225		
10.00	-0.9847		
12.50	-0.7530		
15.00	-0.7120		
20.00	-0.5979		
30.00	-0.5219		
40.00	-0.4580		
45.00	-0.4356		
50.00	-0.4008		
55.00	-0.3965		
60.00	-0.3720		
70.00	-0.3225		
80.00	-0.2817		
90.00	-0.2314		
100.00	-0.1797		
120.00	-0.1157		

M = 0.694

mfr = 0.688 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1467	-25.00	0.3145
-15.00	0.1255	-10.00	0.5031
-10.00	0.2373	-4.00	0.8932
-6.00	0.4504	0.00	0.7519
-4.00	0.6559	1.00	-0.4143
-2.00	0.9247	4.00	-1.1915
-1.00	1.0624	10.00	-1.3055
0.00	0.9896		
0.25	0.5629		
1.00	0.0791		
2.00	-0.3193		
4.00	-0.5419		
6.00	-0.5694		
10.00	-0.5311		
12.50	-0.5738		
15.00	-0.4876		
20.00	-0.4497		
30.00	-0.4085		
40.00	-0.3905		
45.00	-0.3635		
50.00	-0.3407		
55.00	-0.3283		
60.00	-0.3039		
70.00	-0.2691		
80.00	-0.2297		
90.00	-0.1941		
100.00	-0.1460		
120.00	-0.0959		

M = 0.694

mfr = 0.687 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2119	-25.00	0.2380
-15.00	0.2655	-10.00	0.3784
-10.00	0.3930	-4.00	0.7965
-6.00	0.6121	0.00	0.8621
-4.00	0.7793	1.00	-0.0687
-2.00	0.9883	4.00	-0.9504
-1.00	1.1102	10.00	-0.9277
0.00	0.8874		
0.25	0.3929		
1.00	-0.1784		
2.00	-0.6725		
4.00	-0.9005		
6.00	-0.8923		
10.00	-0.8031		
12.50	-0.7126		
15.00	-0.6562		
20.00	-0.5847		
30.00	-0.4916		
40.00	-0.4524		
45.00	-0.4211		
50.00	-0.3812		
55.00	-0.3731		
60.00	-0.3452		
70.00	-0.3053		
80.00	-0.2573		
90.00	-0.2123		
100.00	-0.1621		
120.00	-0.1038		

M = 0.694

mfr = 0.686 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3033	-25.00	0.1595
-15.00	0.3435	-10.00	0.2830
-10.00	0.5187	-4.00	0.6420
-6.00	0.7336	0.00	1.0059
-4.00	0.8602	1.00	0.1633
-2.00	1.0556	4.00	-0.5494
-1.00	1.1230	10.00	-0.6185
0.00	0.7576		
0.25	0.1307		
1.00	-0.4618		
2.00	-0.9471		
4.00	-1.2281		
6.00	-1.3726		
10.00	-1.1424		
12.50	-1.1286		
15.00	-0.7135		
20.00	-0.6545		
30.00	-0.5696		
40.00	-0.4924		
45.00	-0.4687		
50.00	-0.4317		
55.00	-0.4077		
60.00	-0.3708		
70.00	-0.3150		
80.00	-0.2751		
90.00	-0.2232		
100.00	-0.1709		
120.00	-0.1121		

Table 6. Continued

(b) Concluded

M = 0.694

mfr = 0.690 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3453	-25.00	0.0691
-15.00	0.4373	-10.00	0.1034
-10.00	0.6177	-4.00	0.4790
-6.00	0.8158	0.00	1.0656
-4.00	0.9516	1.00	0.3887
-2.00	1.0935	4.00	-0.2679
-1.00	1.1214	10.00	-0.3514
0.00	0.6397		
0.25	-0.0700		
1.00	-0.6888		
2.00	-1.1571		
4.00	-1.4598		
6.00	-1.6004		
10.00	-1.5909		
12.50	-1.5301		
15.00	-1.4680		
20.00	-0.7427		
30.00	-0.5849		
40.00	-0.5206		
45.00	-0.4939		
50.00	-0.4499		
55.00	-0.4276		
60.00	-0.3945		
70.00	-0.3336		
80.00	-0.2850		
90.00	-0.2340		
100.00	-0.1846		
120.00	-0.1202		

M = 0.693

mfr = 0.740 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.0042	-25.00	0.0009
-15.00	0.0338	-10.00	0.2162
-10.00	0.1874	-4.00	0.6388
-6.00	0.4418	0.00	0.9908
-4.00	0.6319	1.00	0.0564
-2.00	0.9132	4.00	-0.7175
-1.00	1.0759	10.00	-0.7291
0.00	0.9733		
0.25	0.5061		
1.00	-0.0023		
2.00	-0.4429		
4.00	-0.6857		
6.00	-0.6853		
10.00	-0.7129		
12.50	-0.5960		
15.00	-0.5943		
20.00	-0.5114		
30.00	-0.4752		
40.00	-0.4085		
45.00	-0.4051		
50.00	-0.3810		
55.00	-0.3566		
60.00	-0.3334		
70.00	-0.2887		
80.00	-0.2479		
90.00	-0.1977		
100.00	-0.1505		
120.00	-0.0946		

M = 0.694

mfr = 0.792 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.3047	-25.00	-0.2535
-15.00	-0.2605	-10.00	-0.0753
-10.00	-0.0583	-4.00	0.4888
-6.00	0.2382	0.00	1.0326
-4.00	0.4774	1.00	0.2072
-2.00	0.7776	4.00	-0.4389
-1.00	0.9965	10.00	-0.6332
0.00	1.0574		
0.25	0.6932		
1.00	0.1422		
2.00	-0.2948		
4.00	-0.5279		
6.00	-0.5508		
10.00	-0.5788		
12.50	-0.5434		
15.00	-0.4934		
20.00	-0.4684		
30.00	-0.3992		
40.00	-0.4026		
45.00	-0.3700		
50.00	-0.3416		
55.00	-0.3369		
60.00	-0.3189		
70.00	-0.2751		
80.00	-0.2390		
90.00	-0.1922		
100.00	-0.1467		
120.00	-0.0926		

Table 6. Continued

(c) M = 0.74

M = 0.743

mfr = 0.320 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	1.0223	-25.00	1.0210
-15.00	1.0623	-10.00	1.1074
-10.00	1.1044	-4.00	1.1387
-6.00	1.1400	0.00	-0.0061
-4.00	1.1414	1.00	-1.2366
-2.00	1.0641	4.00	-1.7150
-1.00	0.8730	10.00	-1.7610
0.00	0.0943		
0.25	-0.6874		
1.00	-1.2767		
2.00	-1.5788		
4.00	-1.7036		
6.00	-1.7910		
10.00	-1.7528		
12.50	-1.7162		
15.00	-1.6760		
20.00	-1.6189		
30.00	-1.3897		
40.00	-0.8366		
45.00	-0.7527		
50.00	-0.6866		
55.00	-0.4944		
60.00	-0.3384		
70.00	-0.2911		
80.00	-0.2605		
90.00	-0.2288		
100.00	-0.1908		
120.00	-0.1347		

M = 0.742

mfr = 0.503 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.7502	-25.00	0.7710
-15.00	0.8158	-10.00	0.9048
-10.00	0.8965	-4.00	1.0979
-6.00	1.0193	0.00	0.4879
-4.00	1.0926	1.00	-0.6556
-2.00	1.1431	4.00	-1.2959
-1.00	1.1014	10.00	-1.4599
0.00	0.5422		
0.25	-0.1298		
1.00	-0.7035		
2.00	-1.1454		
4.00	-1.3620		
6.00	-1.4382		
10.00	-1.4145		
12.50	-1.3782		
15.00	-1.3368		
20.00	-1.2358		
30.00	-0.6554		
40.00	-0.4463		
45.00	-0.4400		
50.00	-0.4206		
55.00	-0.4068		
60.00	-0.3792		
70.00	-0.3342		
80.00	-0.2885		
90.00	-0.2382		
100.00	-0.1860		
120.00	-0.1247		

M = 0.742

mfr = 0.599 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4730	-25.00	0.5952
-15.00	0.4931	-10.00	0.7685
-10.00	0.5959	-4.00	1.0470
-6.00	0.7571	0.00	0.6027
-4.00	0.8803	1.00	-0.5490
-2.00	1.0640	4.00	-1.2853
-1.00	1.1414	10.00	-1.4019
0.00	0.8704		
0.25	0.3658		
1.00	-0.1571		
2.00	-0.5954		
4.00	-0.8642		
6.00	-0.9056		
10.00	-0.9020		
12.50	-0.9454		
15.00	-0.5938		
20.00	-0.5619		
30.00	-0.5083		
40.00	-0.4547		
45.00	-0.4323		
50.00	-0.4051		
55.00	-0.3901		
60.00	-0.3531		
70.00	-0.3121		
80.00	-0.2665		
90.00	-0.2194		
100.00	-0.1602		
120.00	-0.1069		

M = 0.742

mfr = 0.600 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5305	-25.00	0.5437
-15.00	0.5651	-10.00	0.6933
-10.00	0.7046	-4.00	0.9942
-6.00	0.8504	0.00	0.7238
-4.00	0.9805	1.00	-0.3436
-2.00	1.1093	4.00	-1.0883
-1.00	1.1412	10.00	-1.2280
0.00	0.7611		
0.25	0.1353		
1.00	-0.4260		
2.00	-0.8595		
4.00	-1.1122		
6.00	-1.2246		
10.00	-1.2435		
12.50	-1.1773		
15.00	-1.1126		
20.00	-1.0700		
30.00	-0.5296		
40.00	-0.4958		
45.00	-0.4650		
50.00	-0.4335		
55.00	-0.4173		
60.00	-0.3846		
70.00	-0.3251		
80.00	-0.2786		
90.00	-0.2253		
100.00	-0.1770		
120.00	-0.1150		

M = 0.744

mfr = 0.599 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5849	-25.00	0.4798
-15.00	0.6496	-10.00	0.5884
-10.00	0.7844	-4.00	0.9049
-6.00	0.9284	0.00	0.8548
-4.00	1.0345	1.00	-0.1120
-2.00	1.1337	4.00	-0.8195
-1.00	1.1295	10.00	-0.9066
0.00	0.6533		
0.25	-0.0242		
1.00	-0.5748		
2.00	-1.0684		
4.00	-1.2728		
6.00	-1.4098		
10.00	-1.3996		
12.50	-1.3395		
15.00	-1.3277		
20.00	-1.3269		
30.00	-0.8996		
40.00	-0.4440		
45.00	-0.4166		
50.00	-0.4111		
55.00	-0.3969		
60.00	-0.3647		
70.00	-0.3274		
80.00	-0.2776		
90.00	-0.2334		
100.00	-0.1775		
120.00	-0.1177		

M = 0.744

mfr = 0.602 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6183	-25.00	0.4147
-15.00	0.7009	-10.00	0.4925
-10.00	0.8462	-4.00	0.8038
-6.00	0.9911	0.00	0.9841
-4.00	1.0737	1.00	0.1764
-2.00	1.1420	4.00	-0.5303
-1.00	1.0991	10.00	-0.6633
0.00	0.5223		
0.25	-0.1724		
1.00	-0.8187		
2.00	-1.2527		
4.00	-1.4750		
6.00	-1.5524		
10.00	-1.5602		
12.50	-1.5681		
15.00	-1.5292		
20.00	-1.4554		
30.00	-1.2472		
40.00	-0.7189		
45.00	-0.5827		
50.00	-0.4421		
55.00	-0.3741		
60.00	-0.3188		
70.00	-0.2944		
80.00	-0.2506		
90.00	-0.2138		
100.00	-0.1763		
120.00	-0.1204		

M = 0.744

mfr = 0.641 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4168	-25.00	0.4115
-15.00	0.4402	-10.00	0.5928
-10.00	0.5788	-4.00	0.9176
-6.00	0.7715	0.00	0.8142
-4.00	0.9225	1.00	-0.2125
-2.00	1.0800	4.00	-0.9914
-1.00	1.1442	10.00	-1.1720
0.00	0.8358		
0.25	0.2845		
1.00	-0.2826		
2.00	-0.7295		
4.00	-0.9759		
6.00	-1.1490		
10.00	-1.1203		
12.50	-1.0208		
15.00	-1.0200		
20.00	-0.6611		
30.00	-0.5530		
40.00	-0.4972		
45.00	-0.4771		
50.00	-0.4358		
55.00	-0.4229		
60.00	-0.3828		
70.00	-0.3305		
80.00	-0.2849		
90.00	-0.2317		
100.00	-0.1761		
120.00	-0.1131		

M = 0.743

mfr = 0.689 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1573	-25.00	0.3216
-15.00	0.1675	-10.00	0.5405
-10.00	0.3205	-4.00	0.9074
-6.00	0.5086	0.00	0.7779
-4.00	0.6566	1.00	-0.2642
-2.00	0.9433	4.00	-1.0367
-1.00	1.0880	10.00	-1.2537
0.00	1.0128		
0.25	0.6136		
1.00	0.1460		
2.00	-0.2872		
4.00	-0.5346		
6.00	-0.6192		
10.00	-0.7251		
12.50	-0.5630		
15.00	-0.5402		
20.00	-0.4741		
30.00	-0.4552		
40.00	-0.4052		
45.00	-0.3973		
50.00	-0.3631		
55.00	-0.3549		
60.00	-0.3332		
70.00	-0.2837		
80.00	-0.2488		
90.00	-0.1987		
100.00	-0.1505		
120.00	-0.0937		

Table 6. Continued

(c) Concluded

M = 0.743

mfr = 0.690 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2485	-25.00	0.2732
-15.00	0.2836	-10.00	0.4292
-10.00	0.4362	-4.00	0.8133
-6.00	0.6174	0.00	0.9116
-4.00	0.7991	1.00	-0.0449
-2.00	1.0206	4.00	-0.8503
-1.00	1.1200	10.00	-0.9262
0.00	0.9150		
0.25	0.4715		
1.00	-0.0977		
2.00	-0.5619		
4.00	-0.8496		
6.00	-0.9731		
10.00	-0.9098		
12.50	-0.9554		
15.00	-0.8594		
20.00	-0.5631		
30.00	-0.5344		
40.00	-0.4647		
45.00	-0.4490		
50.00	-0.4049		
55.00	-0.3884		
60.00	-0.3612		
70.00	-0.3164		
80.00	-0.2645		
90.00	-0.2140		
100.00	-0.1592		
120.00	-0.1020		

M = 0.742

mfr = 0.690 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3014	-25.00	0.1771
-15.00	0.3860	-10.00	0.2662
-10.00	0.5484	-4.00	0.6810
-6.00	0.7299	0.00	0.9879
-4.00	0.8844	1.00	0.1991
-2.00	1.0760	4.00	-0.5061
-1.00	1.1440	10.00	-0.6914
0.00	0.8283		
0.25	0.2399		
1.00	-0.3429		
2.00	-0.8104		
4.00	-1.0829		
6.00	-1.2386		
10.00	-1.2563		
12.50	-1.1956		
15.00	-1.1374		
20.00	-1.1787		
30.00	-0.5115		
40.00	-0.4788		
45.00	-0.4690		
50.00	-0.4292		
55.00	-0.4178		
60.00	-0.3760		
70.00	-0.3244		
80.00	-0.2769		
90.00	-0.2247		
100.00	-0.1698		
120.00	-0.1087		

M = 0.743

mfr = 0.690 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3825	-25.00	0.0852
-15.00	0.4601	-10.00	0.1278
-10.00	0.6180	-4.00	0.5567
-6.00	0.8225	0.00	1.0925
-4.00	0.9624	1.00	0.4327
-2.00	1.1115	4.00	-0.2777
-1.00	1.1406	10.00	-0.4248
0.00	0.6910		
0.25	0.0754		
1.00	-0.5230		
2.00	-1.0333		
4.00	-1.2651		
6.00	-1.3669		
10.00	-1.3984		
12.50	-1.3654		
15.00	-1.3756		
20.00	-1.3587		
30.00	-0.8385		
40.00	-0.4966		
45.00	-0.4094		
50.00	-0.3909		
55.00	-0.3819		
60.00	-0.3666		
70.00	-0.3237		
80.00	-0.2794		
90.00	-0.2282		
100.00	-0.1757		
120.00	-0.1089		

M = 0.744

mfr = 0.732 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.0384	-25.00	0.0767
-15.00	0.0842	-10.00	0.2570
-10.00	0.2416	-4.00	0.6910
-6.00	0.4880	0.00	0.9773
-4.00	0.6828	1.00	0.0499
-2.00	0.9275	4.00	-0.6889
-1.00	1.0909	10.00	-0.8531
0.00	0.9840		
0.25	0.5417		
1.00	0.0275		
2.00	-0.3745		
4.00	-0.7080		
6.00	-0.8380		
10.00	-0.8993		
12.50	-0.8588		
15.00	-0.6105		
20.00	-0.5583		
30.00	-0.5084		
40.00	-0.4479		
45.00	-0.4326		
50.00	-0.3886		
55.00	-0.3733		
60.00	-0.3458		
70.00	-0.3002		
80.00	-0.2517		
90.00	-0.2103		
100.00	-0.1567		
120.00	-0.0996		

M = 0.742

mfr = 0.792 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.3443	-25.00	-0.2856
-15.00	-0.2870	-10.00	-0.0437
-10.00	-0.0536	-4.00	0.4921
-6.00	0.2614	0.00	1.0677
-4.00	0.4643	1.00	0.3199
-2.00	0.7900	4.00	-0.4906
-1.00	1.0253	10.00	-0.6704
0.00	1.0542		
0.25	0.7088		
1.00	0.2331		
2.00	-0.2362		
4.00	-0.5624		
6.00	-0.5233		
10.00	-0.7106		
12.50	-0.6069		
15.00	-0.5178		
20.00	-0.5036		
30.00	-0.4638		
40.00	-0.4205		
45.00	-0.4035		
50.00	-0.3716		
55.00	-0.3609		
60.00	-0.3302		
70.00	-0.2817		
80.00	-0.2429		
90.00	-0.1970		
100.00	-0.1456		
120.00	-0.0898		

Table 6. Continued

(d) M = 0.77

M = 0.774

mfr = 0.503 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.7315	-25.00	0.8193
-15.00	0.7699	-10.00	0.9636
-10.00	0.8577	-4.00	1.1381
-6.00	0.9771	0.00	0.3670
-4.00	1.0627	1.00	-0.7695
-2.00	1.1497	4.00	-1.3747
-1.00	1.1462	10.00	-1.4715
0.00	0.6928		
0.25	0.1146		
1.00	-0.4183		
2.00	-0.8096		
4.00	-1.0555		
6.00	-1.1923		
10.00	-1.1665		
12.50	-1.1246		
15.00	-1.0634		
20.00	-1.0641		
30.00	-0.9045		
40.00	-0.4243		
45.00	-0.4329		
50.00	-0.4206		
55.00	-0.4052		
60.00	-0.3806		
70.00	-0.3323		
80.00	-0.2863		
90.00	-0.2281		
100.00	-0.1796		
120.00	-0.1197		

M = 0.772

mfr = 0.503 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.7793	-25.00	0.7851
-15.00	0.8201	-10.00	0.9106
-10.00	0.9157	-4.00	1.1077
-6.00	1.0354	0.00	0.5360
-4.00	1.1138	1.00	-0.5812
-2.00	1.1552	4.00	-1.2103
-1.00	1.1213	10.00	-1.3022
0.00	0.5761		
0.25	-0.0528		
1.00	-0.5876		
2.00	-1.0346		
4.00	-1.2486		
6.00	-1.3460		
10.00	-1.3130		
12.50	-1.3261		
15.00	-1.2516		
20.00	-1.2505		
30.00	-1.1482		
40.00	-0.9102		
45.00	-0.5363		
50.00	-0.3853		
55.00	-0.3362		
60.00	-0.3152		
70.00	-0.2976		
80.00	-0.2635		
90.00	-0.2185		
100.00	-0.1662		
120.00	-0.1129		

M = 0.772

mfr = 0.501 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.8123	-25.00	0.7498
-15.00	0.8633	-10.00	0.8560
-10.00	0.9659	-4.00	1.0680
-6.00	1.0734	0.00	0.6637
-4.00	1.1320	1.00	-0.4087
-2.00	1.1532	4.00	-1.0432
-1.00	1.0721	10.00	-1.1697
0.00	0.4388		
0.25	-0.2385		
1.00	-0.8456		
2.00	-1.2142		
4.00	-1.3908		
6.00	-1.4823		
10.00	-1.4541		
12.50	-1.4710		
15.00	-1.4099		
20.00	-1.3383		
30.00	-1.3113		
40.00	-1.1684		
45.00	-0.7304		
50.00	-0.5895		
55.00	-0.5145		
60.00	-0.4638		
70.00	-0.2553		
80.00	-0.2152		
90.00	-0.1764		
100.00	-0.1495		
120.00	-0.1062		

M = 0.774

mfr = 0.501 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.8545	-25.00	0.6985
-15.00	0.9199	-10.00	0.7855
-10.00	1.0081	-4.00	1.0368
-6.00	1.1064	0.00	0.8077
-4.00	1.1498	1.00	-0.1510
-2.00	1.1463	4.00	-0.8654
-1.00	1.0252	10.00	-0.9763
0.00	0.3316		
0.25	-0.3904		
1.00	-0.9816		
2.00	-1.3621		
4.00	-1.4898		
6.00	-1.5858		
10.00	-1.5791		
12.50	-1.1231		
15.00	-1.4293		
20.00	-1.4084		
30.00	-0.9457		
40.00	-0.8897		
45.00	-0.8094		
50.00	-0.8012		
55.00	-0.7758		
60.00	-0.6944		
70.00	-0.5857		
80.00	-0.4517		
90.00	-0.3550		
100.00	-0.3897		
120.00	-0.1208		

M = 0.774

mfr = 0.592 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5177	-25.00	0.6298
-15.00	0.5459	-10.00	0.8081
-10.00	0.6372	-4.00	1.0584
-6.00	0.7976	0.00	0.6110
-4.00	0.9263	1.00	-0.4714
-2.00	1.0866	4.00	-1.1456
-1.00	1.1551	10.00	-1.3370
0.00	0.8722		
0.25	0.3560		
1.00	-0.1485		
2.00	-0.5501		
4.00	-0.8371		
6.00	-0.9796		
10.00	-0.9661		
12.50	-0.9582		
15.00	-0.9302		
20.00	-0.8715		
30.00	-0.5053		
40.00	-0.4768		
45.00	-0.4637		
50.00	-0.4211		
55.00	-0.4046		
60.00	-0.3732		
70.00	-0.3239		
80.00	-0.2731		
90.00	-0.2219		
100.00	-0.1701		
120.00	-0.1061		

M = 0.773

mfr = 0.593 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5783	-25.00	0.5892
-15.00	0.6117	-10.00	0.7253
-10.00	0.7406	-4.00	1.0093
-6.00	0.8857	0.00	0.7374
-4.00	0.9965	1.00	-0.2864
-2.00	1.1244	4.00	-0.9759
-1.00	1.1539	10.00	-1.1907
0.00	0.7885		
0.25	0.1973		
1.00	-0.3572		
2.00	-0.8025		
4.00	-1.0286		
6.00	-1.1420		
10.00	-1.1902		
12.50	-1.1603		
15.00	-1.1476		
20.00	-1.0933		
30.00	-0.9713		
40.00	-0.4328		
45.00	-0.3935		
50.00	-0.4040		
55.00	-0.3875		
60.00	-0.3636		
70.00	-0.3265		
80.00	-0.2764		
90.00	-0.2263		
100.00	-0.1722		
120.00	-0.1100		

M = 0.774

mfr = 0.592 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6243	-25.00	0.5218
-15.00	0.6805	-10.00	0.6406
-10.00	0.7983	-4.00	0.9496
-6.00	0.9488	0.00	0.8769
-4.00	1.0524	1.00	-0.1156
-2.00	1.1472	4.00	-0.7904
-1.00	1.1380	10.00	-1.0005
0.00	0.6671		
0.25	0.0412		
1.00	-0.5416		
2.00	-0.9533		
4.00	-1.2026		
6.00	-1.2986		
10.00	-1.3382		
12.50	-1.2859		
15.00	-1.2993		
20.00	-1.2541		
30.00	-1.1816		
40.00	-0.8905		
45.00	-0.4848		
50.00	-0.4613		
55.00	-0.3474		
60.00	-0.3070		
70.00	-0.2805		
80.00	-0.2540		
90.00	-0.2114		
100.00	-0.1652		
120.00	-0.1072		

M = 0.773

mfr = 0.593 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6673	-25.00	0.4822
-15.00	0.7469	-10.00	0.5375
-10.00	0.8625	-4.00	0.8498
-6.00	1.0132	0.00	0.9745
-4.00	1.0949	1.00	0.1754
-2.00	1.1546	4.00	-0.5580
-1.00	1.1111	10.00	-0.7051
0.00	0.5210		
0.25	-0.1334		
1.00	-0.7467		
2.00	-1.1435		
4.00	-1.3656		
6.00	-1.4512		
10.00	-1.4807		
12.50	-1.4505		
15.00	-1.4456		
20.00	-1.3794		
30.00	-1.3192		
40.00	-0.7758		
45.00	-0.7194		
50.00	-0.6622		
55.00	-0.6779		
60.00	-0.5750		
70.00	-0.3604		
80.00	-0.2149		
90.00	-0.2022		
100.00	-0.1352		
120.00	-0.0991		

Table 6. Continued

(d) Continued

M = 0.772

mfr = 0.643 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3699	-25.00	0.4962
-15.00	0.3850	-10.00	0.6935
-10.00	0.5088	-4.00	0.9978
-6.00	0.6771	0.00	0.7166
-4.00	0.8255	1.00	-0.3459
-2.00	1.0299	4.00	-1.0720
-1.00	1.1339	10.00	-1.2279
0.00	0.9706		
0.25	0.5186		
1.00	-0.0177		
2.00	-0.3955		
4.00	-0.7093		
6.00	-0.7322		
10.00	-0.8124		
12.50	-0.8552		
15.00	-0.8330		
20.00	-0.5065		
30.00	-0.5050		
40.00	-0.4469		
45.00	-0.4364		
50.00	-0.3951		
55.00	-0.3873		
60.00	-0.3516		
70.00	-0.3055		
80.00	-0.2587		
90.00	-0.2096		
100.00	-0.1547		
120.00	-0.0961		

M = 0.772

mfr = 0.640 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4277	-25.00	0.4420
-15.00	0.4531	-10.00	0.6005
-10.00	0.5865	-4.00	0.9175
-6.00	0.7996	0.00	0.8403
-4.00	0.9241	1.00	-0.1724
-2.00	1.0839	4.00	-0.8570
-1.00	1.1534	10.00	-1.0678
0.00	0.8589		
0.25	0.3380		
1.00	-0.2086		
2.00	-0.6187		
4.00	-0.9049		
6.00	-1.0136		
10.00	-1.0953		
12.50	-1.0477		
15.00	-0.9450		
20.00	-0.9986		
30.00	-0.6892		
40.00	-0.4438		
45.00	-0.4438		
50.00	-0.4277		
55.00	-0.4097		
60.00	-0.3715		
70.00	-0.3198		
80.00	-0.2730		
90.00	-0.2187		
100.00	-0.1654		
120.00	-0.1020		

M = 0.772

mfr = 0.642 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4871	-25.00	0.3848
-15.00	0.5396	-10.00	0.4908
-10.00	0.6843	-4.00	0.8446
-6.00	0.8727	0.00	0.9536
-4.00	0.9756	1.00	0.0864
-2.00	1.1296	4.00	-0.7005
-1.00	1.1551	10.00	-0.9019
0.00	0.7741		
0.25	0.1792		
1.00	-0.3753		
2.00	-0.8396		
4.00	-1.0928		
6.00	-1.2474		
10.00	-1.2388		
12.50	-1.1879		
15.00	-1.2070		
20.00	-1.1841		
30.00	-1.0954		
40.00	-0.6603		
45.00	-0.4165		
50.00	-0.3615		
55.00	-0.3409		
60.00	-0.3435		
70.00	-0.3080		
80.00	-0.2694		
90.00	-0.2196		
100.00	-0.1707		
120.00	-0.1100		

M = 0.773

mfr = 0.643 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5337	-25.00	0.3029
-15.00	0.6267	-10.00	0.3704
-10.00	0.7618	-4.00	0.7218
-6.00	0.9310	0.00	1.0519
-4.00	1.0317	1.00	0.2711
-2.00	1.1447	4.00	-0.3997
-1.00	1.1429	10.00	-0.5468
0.00	0.6400		
0.25	0.0080		
1.00	-0.5803		
2.00	-1.0252		
4.00	-1.2291		
6.00	-1.3702		
10.00	-1.3635		
12.50	-1.3545		
15.00	-1.3197		
20.00	-1.3309		
30.00	-1.2901		
40.00	-0.9897		
45.00	-0.6435		
50.00	-0.5485		
55.00	-0.4157		
60.00	-0.3966		
70.00	-0.2559		
80.00	-0.2178		
90.00	-0.1827		
100.00	-0.1548		
120.00	-0.0997		

M = 0.771

mfr = 0.691 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1881	-25.00	0.3448
-15.00	0.1665	-10.00	0.5402
-10.00	0.3209	-4.00	0.9234
-6.00	0.5299	0.00	0.8091
-4.00	0.6895	1.00	-0.1959
-2.00	0.9422	4.00	-0.9484
-1.00	1.1005	10.00	-1.1889
0.00	1.0406		
0.25	0.6678		
1.00	0.1417		
2.00	-0.2027		
4.00	-0.5284		
6.00	-0.5941		
10.00	-0.7818		
12.50	-0.6001		
15.00	-0.5303		
20.00	-0.4928		
30.00	-0.4665		
40.00	-0.4376		
45.00	-0.4128		
50.00	-0.3716		
55.00	-0.3644		
60.00	-0.3359		
70.00	-0.2924		
80.00	-0.2492		
90.00	-0.2009		
100.00	-0.1545		
120.00	-0.0910		

M = 0.773

mfr = 0.688 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2576	-25.00	0.2751
-15.00	0.3017	-10.00	0.4603
-10.00	0.4613	-4.00	0.8348
-6.00	0.6161	0.00	0.9550
-4.00	0.8000	1.00	-0.0085
-2.00	1.0255	4.00	-0.8134
-1.00	1.1438	10.00	-0.9518
0.00	0.9373		
0.25	0.4864		
1.00	-0.0660		
2.00	-0.4975		
4.00	-0.7811		
6.00	-0.9435		
10.00	-0.9439		
12.50	-0.9102		
15.00	-0.9357		
20.00	-0.8743		
30.00	-0.4796		
40.00	-0.4844		
45.00	-0.4631		
50.00	-0.4275		
55.00	-0.4058		
60.00	-0.3621		
70.00	-0.3175		
80.00	-0.2681		
90.00	-0.2139		
100.00	-0.1576		
120.00	-0.0991		

M = 0.773

mfr = 0.691 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3332	-25.00	0.2140
-15.00	0.3893	-10.00	0.3261
-10.00	0.5667	-4.00	0.7127
-6.00	0.7521	0.00	1.0362
-4.00	0.9185	1.00	0.2265
-2.00	1.0898	4.00	-0.5349
-1.00	1.1552	10.00	-0.7434
0.00	0.8408		
0.25	0.3177		
1.00	-0.2192		
2.00	-0.7024		
4.00	-0.9865		
6.00	-1.1483		
10.00	-1.1670		
12.50	-1.1700		
15.00	-1.1565		
20.00	-1.0459		
30.00	-0.9688		
40.00	-0.4247		
45.00	-0.3914		
50.00	-0.3754		
55.00	-0.3776		
60.00	-0.3634		
70.00	-0.3163		
80.00	-0.2666		
90.00	-0.2222		
100.00	-0.1607		
120.00	-0.1023		

M = 0.774

mfr = 0.692 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3898	-25.00	0.1096
-15.00	0.4706	-10.00	0.1832
-10.00	0.6405	-4.00	0.5659
-6.00	0.8460	0.00	1.1025
-4.00	0.9750	1.00	0.4684
-2.00	1.1269	4.00	-0.2626
-1.00	1.1554	10.00	-0.4719
0.00	0.7605		
0.25	0.1287		
1.00	-0.4353		
2.00	-0.8903		
4.00	-1.1272		
6.00	-1.2759		
10.00	-1.2961		
12.50	-1.2826		
15.00	-1.2639		
20.00	-1.2688		
30.00	-1.1616		
40.00	-0.7222		
45.00	-0.5564		
50.00	-0.4297		
55.00	-0.3999		
60.00	-0.2990		
70.00	-0.2620		
80.00	-0.2381		
90.00	-0.1919		
100.00	-0.1532		
120.00	-0.0978		

Table 6. Continued

(d) Concluded

M = 0.772

mfr = 0.731 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	-0.0011	-25.00	0.1842
-15.00	-0.0121	-10.00	0.4193
-10.00	0.1691	-4.00	0.8388
-6.00	0.3860	0.00	0.9138
-4.00	0.5597	1.00	-0.0813
-2.00	0.8424	4.00	-0.8733
-1.00	1.0663	10.00	-1.1090
0.00	1.0851		
0.25	0.7632		
1.00	0.3034		
2.00	-0.1052		
4.00	-0.3825		
6.00	-0.4866		
10.00	-0.6296		
12.50	-0.4982		
15.00	-0.5105		
20.00	-0.4379		
30.00	-0.4413		
40.00	-0.3964		
45.00	-0.3806		
50.00	-0.3664		
55.00	-0.3499		
60.00	-0.3181		
70.00	-0.2859		
80.00	-0.2388		
90.00	-0.1984		
100.00	-0.1403		
120.00	-0.0870		

M = 0.774

mfr = 0.730 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.0878	-25.00	0.0983
-15.00	0.1072	-10.00	0.2880
-10.00	0.2958	-4.00	0.7210
-6.00	0.5472	0.00	1.0019
-4.00	0.6945	1.00	0.1280
-2.00	0.9600	4.00	-0.6667
-1.00	1.1201	10.00	-0.8211
0.00	1.0057		
0.25	0.5920		
1.00	0.0661		
2.00	-0.3654		
4.00	-0.6241		
6.00	-0.7249		
10.00	-0.8078		
12.50	-0.8835		
15.00	-0.8638		
20.00	-0.5699		
30.00	-0.5278		
40.00	-0.4658		
45.00	-0.4501		
50.00	-0.4090		
55.00	-0.3956		
60.00	-0.3590		
70.00	-0.3056		
80.00	-0.2582		
90.00	-0.2089		
100.00	-0.1517		
120.00	-0.0937		

M = 0.775

mfr = 0.729 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.1621	-25.00	-0.0001
-15.00	0.2344	-10.00	0.1471
-10.00	0.4405	-4.00	0.5962
-6.00	0.6418	0.00	1.0878
-4.00	0.8042	1.00	0.3706
-2.00	1.0204	4.00	-0.4499
-1.00	1.1499	10.00	-0.6707
0.00	0.9420		
0.25	0.4222		
1.00	-0.1318		
2.00	-0.5550		
4.00	-0.8362		
6.00	-1.0309		
10.00	-1.0108		
12.50	-1.0492		
15.00	-1.0272		
20.00	-1.0362		
30.00	-0.9378		
40.00	-0.4134		
45.00	-0.4197		
50.00	-0.3985		
55.00	-0.3873		
60.00	-0.3736		
70.00	-0.3196		
80.00	-0.2678		
90.00	-0.2168		
100.00	-0.1633		
120.00	-0.1010		

M = 0.774

mfr = 0.732 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.2276	-25.00	-0.0861
-15.00	0.3112	-10.00	-0.0080
-10.00	0.5177	-4.00	0.4398
-6.00	0.7408	0.00	1.1357
-4.00	0.8956	1.00	0.5304
-2.00	1.0797	4.00	-0.1346
-1.00	1.1582	10.00	-0.3315
0.00	0.8323		
0.25	0.2722		
1.00	-0.3092		
2.00	-0.7401		
4.00	-1.0334		
6.00	-1.1770		
10.00	-1.2188		
12.50	-1.2192		
15.00	-1.2315		
20.00	-1.1946		
30.00	-1.1319		
40.00	-0.5801		
45.00	-0.4275		
50.00	-0.3551		
55.00	-0.3357		
60.00	-0.3133		
70.00	-0.2935		
80.00	-0.2472		
90.00	-0.2010		
100.00	-0.1535		
120.00	-0.0951		

M = 0.772

mfr = 0.794 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	-0.4844	-25.00	-0.2055
-15.00	-0.4354	-10.00	0.1205
-10.00	-0.1711	-4.00	0.6534
-6.00	0.1235	0.00	0.9982
-4.00	0.3570	1.00	0.1385
-2.00	0.6982	4.00	-0.7096
-1.00	0.9630	10.00	-0.8690
0.00	1.1273		
0.25	0.8490		
1.00	0.4634		
2.00	0.0305		
4.00	-0.2644		
6.00	-0.3266		
10.00	-0.4033		
12.50	-0.4138		
15.00	-0.4302		
20.00	-0.3681		
30.00	-0.3838		
40.00	-0.3763		
45.00	-0.3602		
50.00	-0.3277		
55.00	-0.3393		
60.00	-0.2992		
70.00	-0.2686		
80.00	-0.2304		
90.00	-0.1830		
100.00	-0.1357		
120.00	-0.0787		

M = 0.774

mfr = 0.785 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	-0.2436	-25.00	-0.2390
-15.00	-0.2333	-10.00	0.0327
-10.00	0.0382	-4.00	0.5923
-6.00	0.3317	0.00	1.0652
-4.00	0.5291	1.00	0.3169
-2.00	0.8560	4.00	-0.4265
-1.00	1.0604	10.00	-0.7449
0.00	1.0770		
0.25	0.7358		
1.00	0.2422		
2.00	-0.1443		
4.00	-0.4562		
6.00	-0.6249		
10.00	-0.8023		
12.50	-0.7310		
15.00	-0.5570		
20.00	-0.5107		
30.00	-0.5036		
40.00	-0.4368		
45.00	-0.4151		
50.00	-0.3875		
55.00	-0.3826		
60.00	-0.3516		
70.00	-0.2930		
80.00	-0.2527		
90.00	-0.2023		
100.00	-0.1481		
120.00	-0.0890		

M = 0.774

mfr = 0.785 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	-0.1512	-25.00	-0.3750
-15.00	-0.0653	-10.00	-0.1199
-10.00	0.1750	-4.00	0.4289
-6.00	0.4584	0.00	1.1256
-4.00	0.6738	1.00	0.4719
-2.00	0.9506	4.00	-0.2235
-1.00	1.1055	10.00	-0.4725
0.00	1.0201		
0.25	0.5718		
1.00	0.0712		
2.00	-0.3882		
4.00	-0.7395		
6.00	-0.8825		
10.00	-0.8776		
12.50	-0.8959		
15.00	-0.9470		
20.00	-0.8720		
30.00	-0.5517		
40.00	-0.4819		
45.00	-0.4543		
50.00	-0.4233		
55.00	-0.4043		
60.00	-0.3688		
70.00	-0.3091		
80.00	-0.2602		
90.00	-0.2098		
100.00	-0.1603		
120.00	-0.0990		

M = 0.775

mfr = 0.787 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	-0.0664	-25.00	-0.6151
-15.00	0.0459	-10.00	-0.2857
-10.00	0.2785	-4.00	0.2212
-6.00	0.5524	0.00	1.1504
-4.00	0.7703	1.00	0.6567
-2.00	1.0083	4.00	-0.0013
-1.00	1.1437	10.00	-0.2301
0.00	0.9193		
0.25	0.4254		
1.00	-0.1504		
2.00	-0.5750		
4.00	-0.9036		
6.00	-1.0737		
10.00	-1.0853		
12.50	-1.1133		
15.00	-1.0834		
20.00	-1.1073		
30.00	-1.0294		
40.00	-0.4023		
45.00	-0.3781		
50.00	-0.3758		
55.00	-0.3755		
60.00	-0.3497		
70.00	-0.3076		
80.00	-0.2625		
90.00	-0.2091		
100.00	-0.1553		
120.00	-0.0933		

Table 6. Continued

(e) M = 0.79

M = 0.794

mfr = 0.503 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.7967	-25.00	0.7906
-15.00	0.8293	-10.00	0.9122
-10.00	0.9339	-4.00	1.1187
-6.00	1.0420	0.00	0.5575
-4.00	1.1101	1.00	-0.5051
-2.00	1.1633	4.00	-1.1383
-1.00	1.1254	10.00	-1.2702
0.00	0.6170		
0.25	-0.0131		
1.00	-0.5629		
2.00	-0.9726		
4.00	-1.1736		
6.00	-1.2511		
10.00	-1.2540		
12.50	-1.2438		
15.00	-1.1928		
20.00	-1.1855		
30.00	-1.0812		
40.00	-1.0780		
45.00	-1.0034		
50.00	-0.7697		
55.00	-0.4753		
60.00	-0.3790		
70.00	-0.2555		
80.00	-0.2102		
90.00	-0.1794		
100.00	-0.1519		
120.00	-0.1022		

M = 0.792

mfr = 0.592 and α = -2.1°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5312	-25.00	0.6402
-15.00	0.5460	-10.00	0.8252
-10.00	0.6613	-4.00	1.0664
-6.00	0.8235	0.00	0.6301
-4.00	0.9434	1.00	-0.4324
-2.00	1.0940	4.00	-1.1004
-1.00	1.1632	10.00	-1.2751
0.00	0.8905		
0.25	0.3922		
1.00	-0.1350		
2.00	-0.5061		
4.00	-0.7364		
6.00	-0.9027		
10.00	-0.9529		
12.50	-0.8493		
15.00	-0.8733		
20.00	-0.9027		
30.00	-0.7367		
40.00	-0.4727		
45.00	-0.4360		
50.00	-0.4305		
55.00	-0.4160		
60.00	-0.3782		
70.00	-0.3252		
80.00	-0.2791		
90.00	-0.2264		
100.00	-0.1654		
120.00	-0.1060		

M = 0.792

mfr = 0.592 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5824	-25.00	0.5918
-15.00	0.6181	-10.00	0.7325
-10.00	0.7321	-4.00	1.0253
-6.00	0.8875	0.00	0.7451
-4.00	1.0079	1.00	-0.2601
-2.00	1.1346	4.00	-0.9229
-1.00	1.1607	10.00	-1.1225
0.00	0.7903		
0.25	0.2044		
1.00	-0.3175		
2.00	-0.7113		
4.00	-0.9802		
6.00	-1.1022		
10.00	-1.1335		
12.50	-1.1033		
15.00	-1.1066		
20.00	-1.0525		
30.00	-0.9765		
40.00	-0.9656		
45.00	-0.4933		
50.00	-0.3647		
55.00	-0.3320		
60.00	-0.3030		
70.00	-0.3088		
80.00	-0.2674		
90.00	-0.2194		
100.00	-0.1660		
120.00	-0.1092		

M = 0.791

mfr = 0.592 and α = 2.1°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6323	-25.00	0.5456
-15.00	0.6948	-10.00	0.6546
-10.00	0.8209	-4.00	0.9382
-6.00	0.9661	0.00	0.8890
-4.00	1.0592	1.00	-0.0553
-2.00	1.1540	4.00	-0.7521
-1.00	1.1493	10.00	-0.9342
0.00	0.6961		
0.25	0.0876		
1.00	-0.4663		
2.00	-0.9337		
4.00	-1.1184		
6.00	-1.2663		
10.00	-1.2692		
12.50	-1.2139		
15.00	-1.2259		
20.00	-1.2310		
30.00	-1.1609		
40.00	-1.1260		
45.00	-1.0675		
50.00	-0.6255		
55.00	-0.4783		
60.00	-0.3929		
70.00	-0.2475		
80.00	-0.2039		
90.00	-0.1734		
100.00	-0.1447		
120.00	-0.0955		

M = 0.793

mfr = 0.591 and α = 4.1°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6816	-25.00	0.4843
-15.00	0.7421	-10.00	0.5606
-10.00	0.8775	-4.00	0.8821
-6.00	1.0066	0.00	0.9888
-4.00	1.1037	1.00	0.1664
-2.00	1.1625	4.00	-0.5606
-1.00	1.1216	10.00	-0.6947
0.00	0.5656		
0.25	-0.0714		
1.00	-0.6693		
2.00	-1.1069		
4.00	-1.2788		
6.00	-1.3658		
10.00	-1.3966		
12.50	-1.3792		
15.00	-1.3901		
20.00	-1.3346		
30.00	-1.2578		
40.00	-0.7998		
45.00	-0.7465		
50.00	-0.6820		
55.00	-0.6653		
60.00	-0.6283		
70.00	-0.5022		
80.00	-0.4373		
90.00	-0.2618		
100.00	-0.2132		
120.00	-0.0819		

M = 0.794

mfr = 0.642 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4432	-25.00	0.4481
-15.00	0.5022	-10.00	0.6305
-10.00	0.6140	-4.00	0.9470
-6.00	0.7829	0.00	0.8769
-4.00	0.9326	1.00	-0.1618
-2.00	1.0977	4.00	-0.8499
-1.00	1.1644	10.00	-1.0369
0.00	0.8946		
0.25	0.3879		
1.00	-0.1567		
2.00	-0.5266		
4.00	-0.8267		
6.00	-1.0095		
10.00	-1.0349		
12.50	-1.0034		
15.00	-1.0501		
20.00	-0.9567		
30.00	-0.9404		
40.00	-0.4806		
45.00	-0.3811		
50.00	-0.3590		
55.00	-0.3840		
60.00	-0.3641		
70.00	-0.3022		
80.00	-0.2703		
90.00	-0.2171		
100.00	-0.1650		
120.00	-0.1030		

M = 0.793

mfr = 0.692 and α = -2.1°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1900	-25.00	0.3608
-15.00	0.1939	-10.00	0.5608
-10.00	0.3567	-4.00	0.9222
-6.00	0.5418	0.00	0.8375
-4.00	0.7121	1.00	-0.1637
-2.00	0.9587	4.00	-0.8865
-1.00	1.1047	10.00	-1.1262
0.00	1.0474		
0.25	0.6603		
1.00	0.1657		
2.00	-0.1962		
4.00	-0.4941		
6.00	-0.5571		
10.00	-0.7437		
12.50	-0.7676		
15.00	-0.6709		
20.00	-0.5039		
30.00	-0.5140		
40.00	-0.4513		
45.00	-0.4418		
50.00	-0.4020		
55.00	-0.3842		
60.00	-0.3563		
70.00	-0.3012		
80.00	-0.2607		
90.00	-0.2045		
100.00	-0.1506		
120.00	-0.0900		

M = 0.792

mfr = 0.692 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2716	-25.00	0.2663
-15.00	0.3022	-10.00	0.4381
-10.00	0.4450	-4.00	0.8503
-6.00	0.6696	0.00	0.9530
-4.00	0.8474	1.00	0.0527
-2.00	1.0481	4.00	-0.7031
-1.00	1.1504	10.00	-0.8698
0.00	0.9535		
0.25	0.5328		
1.00	-0.0345		
2.00	-0.4960		
4.00	-0.7343		
6.00	-0.8431		
10.00	-0.9103		
12.50	-0.9012		
15.00	-0.8859		
20.00	-0.8598		
30.00	-0.7749		
40.00	-0.4108		
45.00	-0.4380		
50.00	-0.4137		
55.00	-0.3984		
60.00	-0.3636		
70.00	-0.3161		
80.00	-0.2646		
90.00	-0.2091		
100.00	-0.1562		
120.00	-0.0984		

Table 6. Continued

(e) Concluded

M = 0.794

mfr = 0.692 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3456	-25.00	0.2156
-15.00	0.3826	-10.00	0.3488
-10.00	0.5415	-4.00	0.7400
-6.00	0.7630	0.00	1.0437
-4.00	0.9138	1.00	0.2868
-2.00	1.0902	4.00	-0.4788
-1.00	1.1629	10.00	-0.6917
0.00	0.8682		
0.25	0.3047		
1.00	-0.2260		
2.00	-0.6101		
4.00	-0.8861		
6.00	-1.0789		
10.00	-1.0945		
12.50	-1.0930		
15.00	-1.0691		
20.00	-1.0930		
30.00	-1.0207		
40.00	-0.9317		
45.00	-0.5345		
50.00	-0.3830		
55.00	-0.3255		
60.00	-0.2947		
70.00	-0.2937		
80.00	-0.2546		
90.00	-0.2043		
100.00	-0.1551		
120.00	-0.0968		

M = 0.793

mfr = 0.692 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3977	-25.00	0.1176
-15.00	0.4845	-10.00	0.1992
-10.00	0.6452	-4.00	0.5797
-6.00	0.8310	0.00	1.1088
-4.00	0.9772	1.00	0.4338
-2.00	1.1250	4.00	-0.2292
-1.00	1.1642	10.00	-0.4227
0.00	0.7720		
0.25	0.1756		
1.00	-0.3738		
2.00	-0.8322		
4.00	-1.0517		
6.00	-1.2221		
10.00	-1.2526		
12.50	-1.2015		
15.00	-1.2120		
20.00	-1.2065		
30.00	-1.1539		
40.00	-1.1264		
45.00	-0.8688		
50.00	-0.5882		
55.00	-0.4750		
60.00	-0.4133		
70.00	-0.2642		
80.00	-0.1946		
90.00	-0.1696		
100.00	-0.1324		
120.00	-0.0869		

M = 0.791

mfr = 0.731 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.0944	-25.00	0.0981
-15.00	0.1092	-10.00	0.3189
-10.00	0.3183	-4.00	0.7586
-6.00	0.5454	0.00	1.0209
-4.00	0.7226	1.00	0.1522
-2.00	0.9501	4.00	-0.6065
-1.00	1.1264	10.00	-0.8141
0.00	1.0289		
0.25	0.6495		
1.00	0.1150		
2.00	-0.3295		
4.00	-0.6627		
6.00	-0.7579		
10.00	-0.7462		
12.50	-0.8120		
15.00	-0.8156		
20.00	-0.6990		
30.00	-0.5755		
40.00	-0.4741		
45.00	-0.4607		
50.00	-0.4218		
55.00	-0.4011		
60.00	-0.3673		
70.00	-0.3096		
80.00	-0.2660		
90.00	-0.2155		
100.00	-0.1541		
120.00	-0.0933		

M = 0.793

mfr = 0.786 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.2506	-25.00	-0.2599
-15.00	-0.1991	-10.00	0.0300
-10.00	0.0663	-4.00	0.5581
-6.00	0.3036	0.00	1.0732
-4.00	0.5252	1.00	0.3246
-2.00	0.8706	4.00	-0.4279
-1.00	1.0637	10.00	-0.7021
0.00	1.0700		
0.25	0.7391		
1.00	0.2620		
2.00	-0.1496		
4.00	-0.4634		
6.00	-0.5344		
10.00	-0.7266		
12.50	-0.7552		
15.00	-0.7400		
20.00	-0.6679		
30.00	-0.5380		
40.00	-0.4739		
45.00	-0.4504		
50.00	-0.4040		
55.00	-0.3881		
60.00	-0.3519		
70.00	-0.2991		
80.00	-0.2487		
90.00	-0.1981		
100.00	-0.1405		
120.00	-0.0915		

Table 6. Continued

(f) M = 0.81

M = 0.814

mfr = 0.503 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.7694	-25.00	0.8398
-15.00	0.7965	-10.00	0.9882
-10.00	0.8911	-4.00	1.1489
-6.00	1.0022	0.00	0.4561
-4.00	1.0828	1.00	-0.6221
-2.00	1.1662	4.00	-1.2250
-1.00	1.1592	10.00	-1.3322
0.00	0.7511		
0.25	0.1891		
1.00	-0.3429		
2.00	-0.7430		
4.00	-0.9579		
6.00	-1.0753		
10.00	-1.0563		
12.50	-1.0317		
15.00	-1.0043		
20.00	-0.9941		
30.00	-0.8988		
40.00	-0.8837		
45.00	-0.8886		
50.00	-0.8217		
55.00	-0.7746		
60.00	-0.4452		
70.00	-0.2649		
80.00	-0.2234		
90.00	-0.1935		
100.00	-0.1538		
120.00	-0.0961		

M = 0.813

mfr = 0.504 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.8054	-25.00	0.8035
-15.00	0.8539	-10.00	0.9323
-10.00	0.9329	-4.00	1.1295
-6.00	1.0421	0.00	0.5840
-4.00	1.1099	1.00	-0.4469
-2.00	1.1736	4.00	-1.0581
-1.00	1.1339	10.00	-1.1836
0.00	0.6493		
0.25	0.0269		
1.00	-0.5223		
2.00	-0.9350		
4.00	-1.1092		
6.00	-1.1867		
10.00	-1.1898		
12.50	-1.1933		
15.00	-1.1222		
20.00	-1.1427		
30.00	-1.0730		
40.00	-1.0539		
45.00	-1.0166		
50.00	-0.9793		
55.00	-0.9695		
60.00	-0.8572		
70.00	-0.4027		
80.00	-0.2351		
90.00	-0.1531		
100.00	-0.1186		
120.00	-0.0765		

M = 0.812

mfr = 0.503 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.8381	-25.00	0.7750
-15.00	0.9007	-10.00	0.8807
-10.00	0.9917	-4.00	1.0867
-6.00	1.0886	0.00	0.7332
-4.00	1.1499	1.00	-0.3040
-2.00	1.1722	4.00	-0.9269
-1.00	1.0890	10.00	-1.0757
0.00	0.5473		
0.25	-0.1523		
1.00	-0.7051		
2.00	-1.0597		
4.00	-1.2517		
6.00	-1.3109		
10.00	-1.3320		
12.50	-1.3408		
15.00	-1.2985		
20.00	-1.2679		
30.00	-1.2168		
40.00	-1.1756		
45.00	-1.1315		
50.00	-0.8066		
55.00	-0.8391		
60.00	-0.5885		
70.00	-0.5438		
80.00	-0.4877		
90.00	-0.3486		
100.00	-0.2224		
120.00	-0.0746		

M = 0.812

mfr = 0.502 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.8742	-25.00	0.7315
-15.00	0.9431	-10.00	0.8123
-10.00	1.0308	-4.00	1.0433
-6.00	1.1185	0.00	0.8320
-4.00	1.1632	1.00	-0.0886
-2.00	1.1632	4.00	-0.7474
-1.00	1.0544	10.00	-0.8946
0.00	0.4161		
0.25	-0.2883		
1.00	-0.8484		
2.00	-1.1875		
4.00	-1.3383		
6.00	-1.3911		
10.00	-0.8921		
12.50	-1.1984		
15.00	-1.2827		
20.00	-1.1681		
30.00	-0.8854		
40.00	-0.8075		
45.00	-0.7670		
50.00	-0.7687		
55.00	-0.7370		
60.00	-0.7138		
70.00	-0.6490		
80.00	-0.5993		
90.00	-0.5222		
100.00	-0.4595		
120.00	-0.2887		

M = 0.813

mfr = 0.594 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5462	-25.00	0.6565
-15.00	0.5656	-10.00	0.8161
-10.00	0.6769	-4.00	1.0793
-6.00	0.8349	0.00	0.6727
-4.00	0.9395	1.00	-0.3683
-2.00	1.1086	4.00	-1.0413
-1.00	1.1703	10.00	-1.2003
0.00	0.9078		
0.25	0.4154		
1.00	-0.0853		
2.00	-0.4766		
4.00	-0.7033		
6.00	-0.8666		
10.00	-0.8782		
12.50	-0.8543		
15.00	-0.8384		
20.00	-0.8733		
30.00	-0.8067		
40.00	-0.7589		
45.00	-0.6346		
50.00	-0.4498		
55.00	-0.3636		
60.00	-0.3541		
70.00	-0.3154		
80.00	-0.2703		
90.00	-0.2172		
100.00	-0.1591		
120.00	-0.0947		

M = 0.813

mfr = 0.592 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5972	-25.00	0.6027
-15.00	0.6381	-10.00	0.7473
-10.00	0.7622	-4.00	1.0404
-6.00	0.9012	0.00	0.7875
-4.00	1.0104	1.00	-0.1786
-2.00	1.1485	4.00	-0.8782
-1.00	1.1728	10.00	-1.0802
0.00	0.8056		
0.25	0.2732		
1.00	-0.2670		
2.00	-0.6678		
4.00	-0.9068		
6.00	-1.0145		
10.00	-1.0515		
12.50	-1.0451		
15.00	-1.0258		
20.00	-1.0289		
30.00	-0.9825		
40.00	-0.9515		
45.00	-0.8720		
50.00	-0.9100		
55.00	-0.8481		
60.00	-0.3652		
70.00	-0.2449		
80.00	-0.2037		
90.00	-0.1833		
100.00	-0.1453		
120.00	-0.0877		

M = 0.813

mfr = 0.593 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6468	-25.00	0.5542
-15.00	0.7117	-10.00	0.6677
-10.00	0.8367	-4.00	0.9510
-6.00	0.9674	0.00	0.9029
-4.00	1.0696	1.00	-0.0089
-2.00	1.1659	4.00	-0.7219
-1.00	1.1552	10.00	-0.8915
0.00	0.6969		
0.25	0.0803		
1.00	-0.4531		
2.00	-0.8446		
4.00	-1.0455		
6.00	-1.1247		
10.00	-1.2039		
12.50	-1.1638		
15.00	-1.1722		
20.00	-1.1487		
30.00	-1.1198		
40.00	-1.0913		
45.00	-1.0589		
50.00	-1.0339		
55.00	-0.9241		
60.00	-0.5847		
70.00	-0.3901		
80.00	-0.2821		
90.00	-0.1501		
100.00	-0.0984		
120.00	-0.0612		

M = 0.812

mfr = 0.593 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.6853	-25.00	0.4967
-15.00	0.7679	-10.00	0.5819
-10.00	0.8971	-4.00	0.8690
-6.00	1.0138	0.00	1.0070
-4.00	1.1152	1.00	0.2049
-2.00	1.1707	4.00	-0.5453
-1.00	1.1318	10.00	-0.6337
0.00	0.5864		
0.25	-0.0305		
1.00	-0.5955		
2.00	-1.0204		
4.00	-1.2152		
6.00	-1.3111		
10.00	-1.3167		
12.50	-1.3202		
15.00	-1.3103		
20.00	-1.2655		
30.00	-1.2138		
40.00	-0.7833		
45.00	-0.7023		
50.00	-0.6776		
55.00	-0.6716		
60.00	-0.5994		
70.00	-0.5800		
80.00	-0.5226		
90.00	-0.3746		
100.00	-0.3552		
120.00	-0.1055		

Table 6. Continued

(f) Continued

M = 0.811

mfr = 0.644 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3852	-25.00	0.5135
-15.00	0.4044	-10.00	0.7082
-10.00	0.5313	-4.00	1.0155
-6.00	0.7107	0.00	0.7537
-4.00	0.8663	1.00	-0.2374
-2.00	1.0474	4.00	-0.9511
-1.00	1.1593	10.00	-1.1258
0.00	0.9977		
0.25	0.5467		
1.00	0.0674		
2.00	-0.3202		
4.00	-0.6133		
6.00	-0.7541		
10.00	-0.6797		
12.50	-0.7569		
15.00	-0.7858		
20.00	-0.8031		
30.00	-0.6825		
40.00	-0.5195		
45.00	-0.4511		
50.00	-0.4447		
55.00	-0.4084		
60.00	-0.3837		
70.00	-0.3248		
80.00	-0.2680		
90.00	-0.2126		
100.00	-0.1558		
120.00	-0.0910		

M = 0.812

mfr = 0.645 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4546	-25.00	0.4680
-15.00	0.4896	-10.00	0.6388
-10.00	0.6304	-4.00	0.9533
-6.00	0.8081	0.00	0.8949
-4.00	0.9336	1.00	-0.0393
-2.00	1.0967	4.00	-0.7742
-1.00	1.1738	10.00	-0.9931
0.00	0.8957		
0.25	0.3955		
1.00	-0.1097		
2.00	-0.5160		
4.00	-0.7584		
6.00	-0.9075		
10.00	-0.9826		
12.50	-0.9696		
15.00	-0.9823		
20.00	-0.8991		
30.00	-0.8815		
40.00	-0.8540		
45.00	-0.7817		
50.00	-0.7006		
55.00	-0.3919		
60.00	-0.2911		
70.00	-0.2718		
80.00	-0.2404		
90.00	-0.1978		
100.00	-0.1523		
120.00	-0.0946		

M = 0.813

mfr = 0.644 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5284	-25.00	0.4138
-15.00	0.5698	-10.00	0.5540
-10.00	0.7144	-4.00	0.8650
-6.00	0.8916	0.00	0.9740
-4.00	1.0053	1.00	0.1044
-2.00	1.1387	4.00	-0.5949
-1.00	1.1743	10.00	-0.7443
0.00	0.8126		
0.25	0.1972		
1.00	-0.3092		
2.00	-0.6985		
4.00	-0.9594		
6.00	-1.0821		
10.00	-1.0962		
12.50	-1.0920		
15.00	-1.0899		
20.00	-1.1015		
30.00	-1.0048		
40.00	-0.9960		
45.00	-0.9946		
50.00	-0.9679		
55.00	-0.8307		
60.00	-0.4313		
70.00	-0.2783		
80.00	-0.1967		
90.00	-0.1408		
100.00	-0.1141		
120.00	-0.0801		

M = 0.812

mfr = 0.645 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5573	-25.00	0.3348
-15.00	0.6443	-10.00	0.4149
-10.00	0.7765	-4.00	0.7546
-6.00	0.9426	0.00	1.0685
-4.00	1.0577	1.00	0.3190
-2.00	1.1642	4.00	-0.3656
-1.00	1.1625	10.00	-0.6089
0.00	0.7089		
0.25	0.0959		
1.00	-0.4700		
2.00	-0.8917		
4.00	-1.1028		
6.00	-1.2128		
10.00	-1.2065		
12.50	-1.2216		
15.00	-1.2325		
20.00	-1.2132		
30.00	-1.1952		
40.00	-1.1441		
45.00	-1.0387		
50.00	-0.8829		
55.00	-0.5990		
60.00	-0.5553		
70.00	-0.5035		
80.00	-0.3875		
90.00	-0.2430		
100.00	-0.1323		
120.00	-0.0645		

M = 0.814

mfr = 0.690 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2147	-25.00	0.3555
-15.00	0.2103	-10.00	0.5686
-10.00	0.3548	-4.00	0.9350
-6.00	0.5611	0.00	0.8988
-4.00	0.7307	1.00	-0.0896
-2.00	0.9664	4.00	-0.8126
-1.00	1.1236	10.00	-0.9973
0.00	1.0628		
0.25	0.6509		
1.00	0.2174		
2.00	-0.1612		
4.00	-0.4790		
6.00	-0.5601		
10.00	-0.6820		
12.50	-0.7069		
15.00	-0.7055		
20.00	-0.6433		
30.00	-0.5278		
40.00	-0.4800		
45.00	-0.4885		
50.00	-0.4442		
55.00	-0.4288		
60.00	-0.3813		
70.00	-0.3129		
80.00	-0.2644		
90.00	-0.2100		
100.00	-0.1524		
120.00	-0.0920		

M = 0.813

mfr = 0.691 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2831	-25.00	0.2957
-15.00	0.3136	-10.00	0.4714
-10.00	0.4707	-4.00	0.8573
-6.00	0.6699	0.00	0.9581
-4.00	0.8522	1.00	0.0523
-2.00	1.0510	4.00	-0.6442
-1.00	1.1539	10.00	-0.8504
0.00	0.9836		
0.25	0.5227		
1.00	0.0107		
2.00	-0.3806		
4.00	-0.6469		
6.00	-0.8129		
10.00	-0.8615		
12.50	-0.8488		
15.00	-0.8780		
20.00	-0.8650		
30.00	-0.8344		
40.00	-0.7690		
45.00	-0.6026		
50.00	-0.3806		
55.00	-0.3458		
60.00	-0.3081		
70.00	-0.2979		
80.00	-0.2564		
90.00	-0.2054		
100.00	-0.1474		
120.00	-0.0891		

M = 0.814

mfr = 0.692 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3557	-25.00	0.2118
-15.00	0.4256	-10.00	0.3510
-10.00	0.5548	-4.00	0.7333
-6.00	0.7841	0.00	1.0607
-4.00	0.9302	1.00	0.2645
-2.00	1.0928	4.00	-0.4459
-1.00	1.1746	10.00	-0.6416
0.00	0.8740		
0.25	0.3515		
1.00	-0.1647		
2.00	-0.5638		
4.00	-0.8418		
6.00	-0.9953		
10.00	-1.0006		
12.50	-1.0196		
15.00	-1.0537		
20.00	-1.0375		
30.00	-0.9584		
40.00	-0.9644		
45.00	-0.9539		
50.00	-0.9100		
55.00	-0.5248		
60.00	-0.3555		
70.00	-0.2332		
80.00	-0.2086		
90.00	-0.1615		
100.00	-0.1239		
120.00	-0.0822		

M = 0.812

mfr = 0.693 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4145	-25.00	0.1462
-15.00	0.4957	-10.00	0.2077
-10.00	0.6440	-4.00	0.6052
-6.00	0.8532	0.00	1.1186
-4.00	0.9725	1.00	0.5037
-2.00	1.1427	4.00	-0.1932
-1.00	1.1741	10.00	-0.4172
0.00	0.8068		
0.25	0.2404		
1.00	-0.3335		
2.00	-0.7446		
4.00	-1.0273		
6.00	-1.1514		
10.00	-1.1838		
12.50	-1.1563		
15.00	-1.1545		
20.00	-1.1760		
30.00	-1.1151		
40.00	-1.1101		
45.00	-1.0766		
50.00	-1.0090		
55.00	-0.5793		
60.00	-0.5222		
70.00	-0.3931		
80.00	-0.2151		
90.00	-0.1495		
100.00	-0.1031		
120.00	-0.0539		

Table 6. Continued

(f) Concluded

M = 0.810

mfr = 0.731 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.0042	-25.00	0.1731
-15.00	0.0097	-10.00	0.4278
-10.00	0.1762	-4.00	0.8447
-6.00	0.4198	0.00	0.9452
-4.00	0.6075	1.00	-0.0148
-2.00	0.8823	4.00	-0.7326
-1.00	1.0749	10.00	-0.9694
0.00	1.1013		
0.25	0.7668		
1.00	0.3159		
2.00	-0.0397		
4.00	-0.3432		
6.00	-0.4248		
10.00	-0.6474		
12.50	-0.6707		
15.00	-0.5153		
20.00	-0.4407		
30.00	-0.5305		
40.00	-0.4757		
45.00	-0.4425		
50.00	-0.4227		
55.00	-0.3973		
60.00	-0.3627		
70.00	-0.3086		
80.00	-0.2598		
90.00	-0.2001		
100.00	-0.1447		
120.00	-0.0816		

M = 0.813

mfr = 0.732 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1080	-25.00	0.1135
-15.00	0.1505	-10.00	0.2867
-10.00	0.3075	-4.00	0.7322
-6.00	0.5433	0.00	1.0261
-4.00	0.7060	1.00	0.1694
-2.00	0.9816	4.00	-0.5796
-1.00	1.1406	10.00	-0.7584
0.00	1.0452		
0.25	0.5656		
1.00	0.1415		
2.00	-0.2922		
4.00	-0.5533		
6.00	-0.7112		
10.00	-0.6939		
12.50	-0.7635		
15.00	-0.8082		
20.00	-0.7787		
30.00	-0.7284		
40.00	-0.7551		
45.00	-0.5319		
50.00	-0.3927		
55.00	-0.3843		
60.00	-0.3656		
70.00	-0.3041		
80.00	-0.2602		
90.00	-0.2053		
100.00	-0.1495		
120.00	-0.0887		

M = 0.813

mfr = 0.733 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1797	-25.00	0.0373
-15.00	0.2567	-10.00	0.1841
-10.00	0.4355	-4.00	0.6141
-6.00	0.6540	0.00	1.0931
-4.00	0.8610	1.00	0.3832
-2.00	1.0539	4.00	-0.3285
-1.00	1.1638	10.00	-0.5999
0.00	0.9409		
0.25	0.4621		
1.00	-0.0372		
2.00	-0.4267		
4.00	-0.7054		
6.00	-0.9083		
10.00	-0.9452		
12.50	-0.9491		
15.00	-0.9628		
20.00	-0.9076		
30.00	-0.9304		
40.00	-0.9037		
45.00	-0.8918		
50.00	-0.6000		
55.00	-0.3820		
60.00	-0.3016		
70.00	-0.2390		
80.00	-0.2207		
90.00	-0.1870		
100.00	-0.1276		
120.00	-0.0820		

M = 0.812

mfr = 0.733 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2372	-25.00	-0.0682
-15.00	0.3330	-10.00	-0.0020
-10.00	0.5270	-4.00	0.4670
-6.00	0.7558	0.00	1.1442
-4.00	0.9052	1.00	0.5829
-2.00	1.0963	4.00	-0.1700
-1.00	1.1732	10.00	-0.3613
0.00	0.8797		
0.25	0.3127		
1.00	-0.2265		
2.00	-0.6683		
4.00	-0.9078		
6.00	-1.0409		
10.00	-1.0937		
12.50	-1.1000		
15.00	-1.1159		
20.00	-1.1226		
30.00	-1.0669		
40.00	-1.0596		
45.00	-1.0296		
50.00	-0.9216		
55.00	-0.5800		
60.00	-0.4011		
70.00	-0.2607		
80.00	-0.1910		
90.00	-0.1332		
100.00	-0.1118		
120.00	-0.0697		

M = 0.811

mfr = 0.788 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.4038	-25.00	-0.1484
-15.00	-0.3620	-10.00	0.1743
-10.00	-0.0942	-4.00	0.6918
-6.00	0.1914	0.00	1.0290
-4.00	0.4227	1.00	0.1684
-2.00	0.7411	4.00	-0.5644
-1.00	0.9799	10.00	-0.7917
0.00	1.1434		
0.25	0.8739		
1.00	0.4471		
2.00	0.1016		
4.00	-0.2128		
6.00	-0.3130		
10.00	-0.4281		
12.50	-0.4242		
15.00	-0.4327		
20.00	-0.3977		
30.00	-0.4552		
40.00	-0.4179		
45.00	-0.4133		
50.00	-0.3843		
55.00	-0.3641		
60.00	-0.3437		
70.00	-0.2841		
80.00	-0.2403		
90.00	-0.1924		
100.00	-0.1331		
120.00	-0.0740		

M = 0.814

mfr = 0.786 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.2626	-25.00	-0.2618
-15.00	-0.2178	-10.00	0.0786
-10.00	0.0653	-4.00	0.5816
-6.00	0.3400	0.00	1.0921
-4.00	0.5412	1.00	0.3226
-2.00	0.8746	4.00	-0.4499
-1.00	1.0709	10.00	-0.6426
0.00	1.1009		
0.25	0.7552		
1.00	0.3188		
2.00	-0.1528		
4.00	-0.4339		
6.00	-0.5606		
10.00	-0.6743		
12.50	-0.7157		
15.00	-0.7221		
20.00	-0.6592		
30.00	-0.5743		
40.00	-0.5199		
45.00	-0.4686		
50.00	-0.4472		
55.00	-0.4009		
60.00	-0.3633		
70.00	-0.2998		
80.00	-0.2577		
90.00	-0.2033		
100.00	-0.1464		
120.00	-0.0813		

M = 0.811

mfr = 0.788 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.1683	-25.00	-0.4710
-15.00	-0.0734	-10.00	-0.1090
-10.00	0.1722	-4.00	0.4280
-6.00	0.4854	0.00	1.1350
-4.00	0.6793	1.00	0.5046
-2.00	0.9585	4.00	-0.1687
-1.00	1.1291	10.00	-0.4844
0.00	1.0223		
0.25	0.5980		
1.00	0.0793		
2.00	-0.2910		
4.00	-0.5970		
6.00	-0.7598		
10.00	-0.8159		
12.50	-0.8289		
15.00	-0.8403		
20.00	-0.8833		
30.00	-0.8829		
40.00	-0.8127		
45.00	-0.6943		
50.00	-0.3523		
55.00	-0.3241		
60.00	-0.3096		
70.00	-0.2899		
80.00	-0.2504		
90.00	-0.1965		
100.00	-0.1415		
120.00	-0.0859		

M = 0.812

mfr = 0.786 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.0907	-25.00	-0.7039
-15.00	0.0642	-10.00	-0.2312
-10.00	0.2948	-4.00	0.2722
-6.00	0.5738	0.00	1.1645
-4.00	0.7834	1.00	0.6801
-2.00	1.0235	4.00	0.0288
-1.00	1.1526	10.00	-0.2601
0.00	0.9551		
0.25	0.4990		
1.00	-0.0618		
2.00	-0.4626		
4.00	-0.7655		
6.00	-0.9298		
10.00	-1.0059		
12.50	-1.0218		
15.00	-1.0207		
20.00	-1.0186		
30.00	-0.9978		
40.00	-0.9788		
45.00	-0.9841		
50.00	-0.7303		
55.00	-0.4382		
60.00	-0.3579		
70.00	-0.2268		
80.00	-0.1969		
90.00	-0.1670		
100.00	-0.1215		
120.00	-0.0748		

Table 6. Continued

(g) M = 0.83

M = 0.833

mfr = 0.594 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.5568	-25.00	0.6728
-15.00	0.5941	-10.00	0.8404
-10.00	0.6873	-4.00	1.0758
-6.00	0.8460	0.00	0.7011
-4.00	0.9721	1.00	-0.3284
-2.00	1.1172	4.00	-0.9484
-1.00	1.1822	10.00	-1.1181
0.00	0.9280		
0.25	0.4525		
1.00	-0.0250		
2.00	-0.4355		
4.00	-0.6721		
6.00	-0.8010		
10.00	-0.8201		
12.50	-0.8577		
15.00	-0.7992		
20.00	-0.8266		
30.00	-0.7777		
40.00	-0.7343		
45.00	-0.7449		
50.00	-0.7196		
55.00	-0.7069		
60.00	-0.6970		
70.00	-0.3011		
80.00	-0.2249		
90.00	-0.1835		
100.00	-0.1356		
120.00	-0.0847		

M = 0.832

mfr = 0.592 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.6104	-25.00	0.6173
-15.00	0.6385	-10.00	0.7600
-10.00	0.7548	-4.00	1.0295
-6.00	0.9194	0.00	0.8106
-4.00	1.0112	1.00	-0.1719
-2.00	1.1548	4.00	-0.7945
-1.00	1.1822	10.00	-1.0206
0.00	0.8336		
0.25	0.2843		
1.00	-0.2029		
2.00	-0.6115		
4.00	-0.8221		
6.00	-0.9420		
10.00	-0.9968		
12.50	-0.9948		
15.00	-0.9975		
20.00	-0.9619		
30.00	-0.8831		
40.00	-0.9102		
45.00	-0.9030		
50.00	-0.8930		
55.00	-0.8728		
60.00	-0.8811		
70.00	-0.4060		
80.00	-0.2156		
90.00	-0.1409		
100.00	-0.1128		
120.00	-0.0594		

M = 0.832

mfr = 0.594 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.6568	-25.00	0.5691
-15.00	0.7218	-10.00	0.6726
-10.00	0.8394	-4.00	0.9727
-6.00	0.9850	0.00	0.9079
-4.00	1.0812	1.00	-0.0186
-2.00	1.1725	4.00	-0.6671
-1.00	1.1681	10.00	-0.8336
0.00	0.7282		
0.25	0.1726		
1.00	-0.3660		
2.00	-0.7930		
4.00	-1.0060		
6.00	-1.1248		
10.00	-1.1543		
12.50	-1.1094		
15.00	-1.1029		
20.00	-1.1084		
30.00	-1.0741		
40.00	-1.0605		
45.00	-1.0344		
50.00	-1.0002		
55.00	-0.9892		
60.00	-0.9670		
70.00	-0.5043		
80.00	-0.3838		
90.00	-0.2920		
100.00	-0.1756		
120.00	-0.0289		

M = 0.834

mfr = 0.595 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.7081	-25.00	0.5111
-15.00	0.7802	-10.00	0.5971
-10.00	0.8958	-4.00	0.8948
-6.00	1.0343	0.00	1.0149
-4.00	1.1211	1.00	0.1962
-2.00	1.1829	4.00	-0.4615
-1.00	1.1460	10.00	-0.6288
0.00	0.6320		
0.25	-0.0140		
1.00	-0.5510		
2.00	-0.9364		
4.00	-1.1292		
6.00	-1.2259		
10.00	-1.2413		
12.50	-1.2389		
15.00	-1.2365		
20.00	-1.2078		
30.00	-1.1405		
40.00	-0.8432		
45.00	-0.7133		
50.00	-0.6333		
55.00	-0.6091		
60.00	-0.6067		
70.00	-0.5691		
80.00	-0.5342		
90.00	-0.5011		
100.00	-0.4293		
120.00	-0.3036		

M = 0.830

mfr = 0.643 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.4691	-25.00	0.4656
-15.00	0.5195	-10.00	0.6143
-10.00	0.6307	-4.00	0.9454
-6.00	0.8179	0.00	0.9128
-4.00	0.9441	1.00	-0.0380
-2.00	1.1183	4.00	-0.7272
-1.00	1.1820	10.00	-0.9241
0.00	0.9151		
0.25	0.4280		
1.00	-0.0670		
2.00	-0.4743		
4.00	-0.7255		
6.00	-0.8669		
10.00	-0.9013		
12.50	-0.9369		
15.00	-0.9057		
20.00	-0.8992		
30.00	-0.8700		
40.00	-0.8827		
45.00	-0.8649		
50.00	-0.8460		
55.00	-0.8007		
60.00	-0.7740		
70.00	-0.3110		
80.00	-0.2015		
90.00	-0.1511		
100.00	-0.1188		
120.00	-0.0742		

M = 0.831

mfr = 0.694 and α = -2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.2164	-25.00	0.3751
-15.00	0.2231	-10.00	0.5750
-10.00	0.3539	-4.00	0.9428
-6.00	0.5761	0.00	0.8975
-4.00	0.7334	1.00	-0.0663
-2.00	0.9618	4.00	-0.7578
-1.00	1.1320	10.00	-0.9767
0.00	1.0620		
0.25	0.7015		
1.00	0.2459		
2.00	-0.1470		
4.00	-0.4187		
6.00	-0.5499		
10.00	-0.6232		
12.50	-0.6694		
15.00	-0.6715		
20.00	-0.6191		
30.00	-0.6003		
40.00	-0.5530		
45.00	-0.5598		
50.00	-0.5656		
55.00	-0.5057		
60.00	-0.3971		
70.00	-0.3132		
80.00	-0.2560		
90.00	-0.2025		
100.00	-0.1409		
120.00	-0.0792		

M = 0.831

mfr = 0.693 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.3022	-25.00	0.3091
-15.00	0.3229	-10.00	0.4941
-10.00	0.4727	-4.00	0.8582
-6.00	0.6998	0.00	0.9756
-4.00	0.8444	1.00	0.1169
-2.00	1.0583	4.00	-0.6004
-1.00	1.1678	10.00	-0.8186
0.00	0.9967		
0.25	0.5422		
1.00	0.0850		
2.00	-0.3591		
4.00	-0.6559		
6.00	-0.7550		
10.00	-0.8325		
12.50	-0.8219		
15.00	-0.7972		
20.00	-0.8216		
30.00	-0.8250		
40.00	-0.7560		
45.00	-0.7536		
50.00	-0.7176		
55.00	-0.7385		
60.00	-0.5326		
70.00	-0.2426		
80.00	-0.2125		
90.00	-0.1693		
100.00	-0.1309		
120.00	-0.0757		

M = 0.832

mfr = 0.692 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-25.00	0.3624	-25.00	0.2382
-15.00	0.4254	-10.00	0.3727
-10.00	0.5726	-4.00	0.7687
-6.00	0.7762	0.00	1.0693
-4.00	0.9400	1.00	0.2681
-2.00	1.1150	4.00	-0.4092
-1.00	1.1810	10.00	-0.6037
0.00	0.9030		
0.25	0.3907		
1.00	-0.1095		
2.00	-0.5265		
4.00	-0.7926		
6.00	-0.9491		
10.00	-0.9696		
12.50	-0.9662		
15.00	-0.9580		
20.00	-0.9672		
30.00	-0.9227		
40.00	-0.9203		
45.00	-0.9073		
50.00	-0.9029		
55.00	-0.8823		
60.00	-0.8864		
70.00	-0.3516		
80.00	-0.1917		
90.00	-0.1314		
100.00	-0.0828		
120.00	-0.0500		

Table 6. Continued

(g) Concluded

M = 0.831

mfr = 0.696 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4178	-25.00	0.1398
-15.00	0.5078	-10.00	0.2383
-10.00	0.6547	-4.00	0.6135
-6.00	0.8521	0.00	1.1271
-4.00	0.9990	1.00	0.4727
-2.00	1.1439	4.00	-0.2037
-1.00	1.1826	10.00	-0.4824
0.00	0.8254		
0.25	0.2445		
1.00	-0.2628		
2.00	-0.6794		
4.00	-0.9193		
6.00	-1.0283		
10.00	-1.0948		
12.50	-1.0537		
15.00	-1.0667		
20.00	-1.0924		
30.00	-1.0584		
40.00	-1.0365		
45.00	-1.0365		
50.00	-1.0084		
55.00	-0.9769		
60.00	-0.6459		
70.00	-0.4530		
80.00	-0.3653		
90.00	-0.2728		
100.00	-0.1851		
120.00	-0.0344		

M = 0.833

mfr = 0.732 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1038	-25.00	0.1126
-15.00	0.1457	-10.00	0.3076
-10.00	0.3252	-4.00	0.7344
-6.00	0.5527	0.00	1.0335
-4.00	0.7373	1.00	0.2380
-2.00	0.9927	4.00	-0.5025
-1.00	1.1372	10.00	-0.7460
0.00	1.0520		
0.25	0.6632		
1.00	0.1568		
2.00	-0.2343		
4.00	-0.4786		
6.00	-0.6774		
10.00	-0.6941		
12.50	-0.7030		
15.00	-0.7515		
20.00	-0.7793		
30.00	-0.7256		
40.00	-0.7444		
45.00	-0.7396		
50.00	-0.6859		
55.00	-0.6829		
60.00	-0.5760		
70.00	-0.2534		
80.00	-0.2217		
90.00	-0.1865		
100.00	-0.1373		
120.00	-0.0799		

M = 0.832

mfr = 0.786 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.3104	-25.00	-0.2789
-15.00	-0.1979	-10.00	0.0549
-10.00	0.0700	-4.00	0.5652
-6.00	0.3334	0.00	1.1066
-4.00	0.5678	1.00	0.4116
-2.00	0.8883	4.00	-0.3726
-1.00	1.0781	10.00	-0.5977
0.00	1.1031		
0.25	0.7536		
1.00	0.3001		
2.00	-0.0531		
4.00	-0.3802		
6.00	-0.5441		
10.00	-0.6242		
12.50	-0.6796		
15.00	-0.6913		
20.00	-0.6618		
30.00	-0.6735		
40.00	-0.6170		
45.00	-0.6570		
50.00	-0.5558		
55.00	-0.5243		
60.00	-0.4216		
70.00	-0.2997		
80.00	-0.2491		
90.00	-0.1985		
100.00	-0.1406		
120.00	-0.0794		

Table 6. Continued

(h) M = 0.85

M = 0.852

mfr = 0.596 and α = -2.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.5804	-25.00	0.6827
-15.00	0.6019	-10.00	0.8489
-10.00	0.6936	-4.00	1.0946
-6.00	0.8685	0.00	0.7361
-4.00	0.9770	1.00	-0.2898
-2.00	1.1298	4.00	-0.9066
-1.00	1.1925	10.00	-1.0527
0.00	0.9695		
0.25	0.4987		
1.00	-0.0089		
2.00	-0.4161		
4.00	-0.6345		
6.00	-0.7663		
10.00	-0.7907		
12.50	-0.8047		
15.00	-0.7720		
20.00	-0.7753		
30.00	-0.7547		
40.00	-0.7437		
45.00	-0.7303		
50.00	-0.7143		
55.00	-0.6966		
60.00	-0.6946		
70.00	-0.6886		
80.00	-0.5862		
90.00	-0.2117		
100.00	-0.1076		
120.00	-0.0539		

M = 0.851

mfr = 0.595 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.6348	-25.00	0.6330
-15.00	0.6728	-10.00	0.7727
-10.00	0.7896	-4.00	1.0562
-6.00	0.9280	0.00	0.8208
-4.00	1.0429	1.00	-0.1112
-2.00	1.1565	4.00	-0.7622
-1.00	1.1899	10.00	-0.9649
0.00	0.8342		
0.25	0.3420		
1.00	-0.1859		
2.00	-0.5459		
4.00	-0.8131		
6.00	-0.9299		
10.00	-0.9276		
12.50	-0.9269		
15.00	-0.9583		
20.00	-0.9583		
30.00	-0.8732		
40.00	-0.8905		
45.00	-0.8589		
50.00	-0.8495		
55.00	-0.8532		
60.00	-0.8488		
70.00	-0.8175		
80.00	-0.6029		
90.00	-0.2703		
100.00	-0.1529		
120.00	-0.0277		

M = 0.851

mfr = 0.594 and α = 2.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.6675	-25.00	0.5841
-15.00	0.7330	-10.00	0.7116
-10.00	0.8460	-4.00	0.9949
-6.00	0.9908	0.00	0.9171
-4.00	1.0893	1.00	0.0757
-2.00	1.1767	4.00	-0.5648
-1.00	1.1811	10.00	-0.7920
0.00	0.7543		
0.25	0.1892		
1.00	-0.3156		
2.00	-0.7167		
4.00	-0.9214		
6.00	-1.0389		
10.00	-1.0649		
12.50	-1.0516		
15.00	-1.0502		
20.00	-1.0586		
30.00	-1.0202		
40.00	-0.9888		
45.00	-0.9768		
50.00	-0.9644		
55.00	-0.9701		
60.00	-0.9698		
70.00	-0.8352		
80.00	-0.4528		
90.00	-0.3851		
100.00	-0.3230		
120.00	-0.0933		

M = 0.852

mfr = 0.596 and α = 4.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.7153	-25.00	0.5260
-15.00	0.7858	-10.00	0.6078
-10.00	0.9046	-4.00	0.8997
-6.00	1.0374	0.00	1.0315
-4.00	1.1291	1.00	0.2497
-2.00	1.1898	4.00	-0.4470
-1.00	1.1542	10.00	-0.5734
0.00	0.6554		
0.25	0.0349		
1.00	-0.5144		
2.00	-0.8630		
4.00	-1.0520		
6.00	-1.1671		
10.00	-1.1674		
12.50	-1.1891		
15.00	-1.1811		
20.00	-1.1424		
30.00	-1.1071		
40.00	-1.0207		
45.00	-0.7832		
50.00	-0.6538		
55.00	-0.6198		
60.00	-0.5665		
70.00	-0.5475		
80.00	-0.5171		
90.00	-0.4951		
100.00	-0.4678		
120.00	-0.3600		

M = 0.852

mfr = 0.646 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.4812	-25.00	0.4954
-15.00	0.5231	-10.00	0.6399
-10.00	0.6437	-4.00	0.9649
-6.00	0.8125	0.00	0.9149
-4.00	0.9567	1.00	0.0298
-2.00	1.1101	4.00	-0.6552
-1.00	1.1900	10.00	-0.8832
0.00	0.9315		
0.25	0.4583		
1.00	-0.0264		
2.00	-0.4527		
4.00	-0.6973		
6.00	-0.8207		
10.00	-0.8757		
12.50	-0.8284		
15.00	-0.8300		
20.00	-0.8400		
30.00	-0.8220		
40.00	-0.8310		
45.00	-0.8260		
50.00	-0.7927		
55.00	-0.8117		
60.00	-0.7947		
70.00	-0.7601		
80.00	-0.4347		
90.00	-0.1980		
100.00	-0.1007		
120.00	-0.0367		

M = 0.851

mfr = 0.695 and α = -2.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.2408	-25.00	0.3753
-15.00	0.2567	-10.00	0.6066
-10.00	0.3732	-4.00	0.9362
-6.00	0.5901	0.00	0.9194
-4.00	0.7434	1.00	-0.0204
-2.00	0.9855	4.00	-0.6908
-1.00	1.1389	10.00	-0.9348
0.00	1.0807		
0.25	0.7374		
1.00	0.2592		
2.00	-0.1047		
4.00	-0.4101		
6.00	-0.5403		
10.00	-0.5734		
12.50	-0.6308		
15.00	-0.6408		
20.00	-0.6031		
30.00	-0.6258		
40.00	-0.5540		
45.00	-0.5967		
50.00	-0.5817		
55.00	-0.5870		
60.00	-0.5884		
70.00	-0.5420		
80.00	-0.2579		
90.00	-0.1664		
100.00	-0.1267		
120.00	-0.0703		

M = 0.852

mfr = 0.693 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.3085	-25.00	0.3197
-15.00	0.3491	-10.00	0.4771
-10.00	0.4974	-4.00	0.8697
-6.00	0.6810	0.00	1.0099
-4.00	0.8564	1.00	0.1825
-2.00	1.0631	4.00	-0.5229
-1.00	1.1762	10.00	-0.7480
0.00	1.0178		
0.25	0.6151		
1.00	0.1121		
2.00	-0.2683		
4.00	-0.5681		
6.00	-0.7078		
10.00	-0.7484		
12.50	-0.7987		
15.00	-0.7897		
20.00	-0.7727		
30.00	-0.6914		
40.00	-0.7751		
45.00	-0.7381		
50.00	-0.7504		
55.00	-0.7604		
60.00	-0.7544		
70.00	-0.7051		
80.00	-0.2667		
90.00	-0.1461		
100.00	-0.0848		
120.00	-0.0462		

M = 0.851

mfr = 0.694 and α = 2.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-25.00	0.3751	-25.00	0.2503
-15.00	0.4322	-10.00	0.3990
-10.00	0.5797	-4.00	0.7620
-6.00	0.8068	0.00	1.0902
-4.00	0.9438	1.00	0.3557
-2.00	1.1161	4.00	-0.3549
-1.00	1.1922	10.00	-0.5715
0.00	0.9117		
0.25	0.4201		
1.00	-0.0643		
2.00	-0.5047		
4.00	-0.7405		
6.00	-0.8683		
10.00	-0.8890		
12.50	-0.9181		
15.00	-0.9274		
20.00	-0.9101		
30.00	-0.9027		
40.00	-0.8777		
45.00	-0.8900		
50.00	-0.8920		
55.00	-0.8987		
60.00	-0.8844		
70.00	-0.7488		
80.00	-0.3417		
90.00	-0.2466		
100.00	-0.1050		
120.00	-0.0136		

Table 6. Continued

(h) Concluded

M = 0.853

mfr = 0.693 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4288	-25.00	0.1688
-15.00	0.5198	-10.00	0.2467
-10.00	0.6699	-4.00	0.6563
-6.00	0.8580	0.00	1.1406
-4.00	1.0042	1.00	0.5167
-2.00	1.1574	4.00	-0.1393
-1.00	1.1929	10.00	-0.4659
0.00	0.8324		
0.25	0.3138		
1.00	-0.2136		
2.00	-0.6434		
4.00	-0.8567		
6.00	-0.9987		
10.00	-1.0100		
12.50	-1.0153		
15.00	-1.0323		
20.00	-1.0360		
30.00	-1.0147		
40.00	-1.0050		
45.00	-0.9887		
50.00	-0.9741		
55.00	-0.9219		
60.00	-0.7193		
70.00	-0.4671		
80.00	-0.4125		
90.00	-0.3716		
100.00	-0.3260		
120.00	-0.2043		

M = 0.851

mfr = 0.734 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1227	-25.00	0.1384
-15.00	0.1585	-10.00	0.3359
-10.00	0.3479	-4.00	0.7426
-6.00	0.5827	0.00	1.0642
-4.00	0.7637	1.00	0.2298
-2.00	1.0017	4.00	-0.4634
-1.00	1.1424	10.00	-0.6563
0.00	1.0689		
0.25	0.6784		
1.00	0.2041		
2.00	-0.1958		
4.00	-0.4927		
6.00	-0.6295		
10.00	-0.6542		
12.50	-0.6555		
15.00	-0.6959		
20.00	-0.7320		
30.00	-0.6905		
40.00	-0.7116		
45.00	-0.7316		
50.00	-0.7059		
55.00	-0.6858		
60.00	-0.6912		
70.00	-0.6572		
80.00	-0.2095		
90.00	-0.1361		
100.00	-0.0920		
120.00	-0.0554		

M = 0.852

mfr = 0.789 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.3617	-25.00	-0.4005
-15.00	-0.2026	-10.00	0.0591
-10.00	0.0986	-4.00	0.5932
-6.00	0.3570	0.00	1.1159
-4.00	0.5711	1.00	0.3940
-2.00	0.8903	4.00	-0.3154
-1.00	1.0907	10.00	-0.5462
0.00	1.1211		
0.25	0.7854		
1.00	0.3442		
2.00	-0.0064		
4.00	-0.3385		
6.00	-0.4824		
10.00	-0.5687		
12.50	-0.6087		
15.00	-0.6484		
20.00	-0.6723		
30.00	-0.6633		
40.00	-0.6677		
45.00	-0.6497		
50.00	-0.6107		
55.00	-0.6127		
60.00	-0.6150		
70.00	-0.4758		
80.00	-0.1979		
90.00	-0.1572		
100.00	-0.1143		
120.00	-0.0623		

Table 6. Continued

(i) M = 0.87

M = 0.874

mfr = 0.645 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.5086	-25.00	0.4991
-15.00	0.5457	-10.00	0.6712
-10.00	0.6634	-4.00	0.9931
-6.00	0.8410	0.00	0.9383
-4.00	0.9720	1.00	0.0459
-2.00	1.1369	4.00	-0.5802
-1.00	1.2013	10.00	-0.8255
0.00	0.9572		
0.25	0.5008		
1.00	0.0223		
2.00	-0.3807		
4.00	-0.6495		
6.00	-0.7763		
10.00	-0.8045		
12.50	-0.7847		
15.00	-0.7831		
20.00	-0.7665		
30.00	-0.8074		
40.00	-0.7831		
45.00	-0.7555		
50.00	-0.7643		
55.00	-0.7743		
60.00	-0.7740		
70.00	-0.7568		
80.00	-0.7293		
90.00	-0.7111		
100.00	-0.2812		
120.00	-0.0409		

M = 0.871

mfr = 0.694 and α = -2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.2458	-25.00	0.4006
-15.00	0.2633	-10.00	0.6032
-10.00	0.4113	-4.00	0.9511
-6.00	0.6097	0.00	0.9460
-4.00	0.7669	1.00	0.0144
-2.00	0.9983	4.00	-0.6425
-1.00	1.1528	10.00	-0.8519
0.00	1.0979		
0.25	0.7182		
1.00	0.2960		
2.00	-0.0675		
4.00	-0.3513		
6.00	-0.4987		
10.00	-0.5049		
12.50	-0.5849		
15.00	-0.5888		
20.00	-0.6025		
30.00	-0.5937		
40.00	-0.5901		
45.00	-0.6032		
50.00	-0.5937		
55.00	-0.5742		
60.00	-0.5934		
70.00	-0.5911		
80.00	-0.5778		
90.00	-0.4483		
100.00	-0.1313		
120.00	-0.0324		

M = 0.870

mfr = 0.695 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3323	-25.00	0.3239
-15.00	0.3630	-10.00	0.4938
-10.00	0.5344	-4.00	0.8643
-6.00	0.7074	0.00	1.0061
-4.00	0.8735	1.00	0.1842
-2.00	1.0702	4.00	-0.5434
-1.00	1.1827	10.00	-0.7336
0.00	1.0343		
0.25	0.6072		
1.00	0.1313		
2.00	-0.2128		
4.00	-0.5137		
6.00	-0.6938		
10.00	-0.6609		
12.50	-0.7209		
15.00	-0.7551		
20.00	-0.7384		
30.00	-0.7264		
40.00	-0.7665		
45.00	-0.7629		
50.00	-0.6964		
55.00	-0.7124		
60.00	-0.6798		
70.00	-0.7104		
80.00	-0.7218		
90.00	-0.4072		
100.00	-0.1636		
120.00	-0.0086		

M = 0.872

mfr = 0.694 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3816	-25.00	0.2544
-15.00	0.4576	-10.00	0.3958
-10.00	0.6251	-4.00	0.7779
-6.00	0.8182	0.00	1.0887
-4.00	0.9502	1.00	0.3234
-2.00	1.1231	4.00	-0.3441
-1.00	1.2013	10.00	-0.5192
0.00	0.9362		
0.25	0.4480		
1.00	-0.0190		
2.00	-0.4054		
4.00	-0.6782		
6.00	-0.8195		
10.00	-0.8360		
12.50	-0.8276		
15.00	-0.8750		
20.00	-0.8718		
30.00	-0.8409		
40.00	-0.8513		
45.00	-0.8455		
50.00	-0.8292		
55.00	-0.8260		
60.00	-0.8370		
70.00	-0.8276		
80.00	-0.8104		
90.00	-0.3902		
100.00	-0.2460		
120.00	-0.0687		

M = 0.872

mfr = 0.696 and α = 4.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.4458	-25.00	0.1889
-15.00	0.5272	-10.00	0.2558
-10.00	0.6792	-4.00	0.6605
-6.00	0.8727	0.00	1.1527
-4.00	1.0140	1.00	0.5346
-2.00	1.1545	4.00	-0.1557
-1.00	1.2026	10.00	-0.4114
0.00	0.8613		
0.25	0.3504		
1.00	-0.1806		
2.00	-0.5723		
4.00	-0.7825		
6.00	-0.9638		
10.00	-0.9788		
12.50	-0.9798		
15.00	-0.9811		
20.00	-0.9840		
30.00	-0.9837		
40.00	-0.9687		
45.00	-0.9512		
50.00	-0.9417		
55.00	-0.9482		
60.00	-0.9213		
70.00	-0.6830		
80.00	-0.4462		
90.00	-0.3916		
100.00	-0.3714		
120.00	-0.2713		

M = 0.870

mfr = 0.736 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1230	-25.00	0.1193
-15.00	0.1703	-10.00	0.3201
-10.00	0.3581	-4.00	0.7862
-6.00	0.5826	0.00	1.0741
-4.00	0.7590	1.00	0.2866
-2.00	1.0050	4.00	-0.4092
-1.00	1.1534	10.00	-0.6055
0.00	1.0816		
0.25	0.7018		
1.00	0.2407		
2.00	-0.1636		
4.00	-0.4800		
6.00	-0.5991		
10.00	-0.6326		
12.50	-0.6033		
15.00	-0.6604		
20.00	-0.6757		
30.00	-0.6975		
40.00	-0.7284		
45.00	-0.6767		
50.00	-0.6884		
55.00	-0.6874		
60.00	-0.6890		
70.00	-0.6880		
80.00	-0.6718		
90.00	-0.2869		
100.00	-0.1161		
120.00	-0.0145		

M = 0.872

mfr = 0.791 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.5060	-25.00	-0.4266
-15.00	-0.1736	-10.00	0.0950
-10.00	0.0995	-4.00	0.5994
-6.00	0.4013	0.00	1.1352
-4.00	0.5877	1.00	0.4644
-2.00	0.9063	4.00	-0.3115
-1.00	1.1022	10.00	-0.5046
0.00	1.1413		
0.25	0.8041		
1.00	0.3688		
2.00	0.0096		
4.00	-0.2914		
6.00	-0.4374		
10.00	-0.5215		
12.50	-0.5755		
15.00	-0.5999		
20.00	-0.6148		
30.00	-0.6317		
40.00	-0.6272		
45.00	-0.6526		
50.00	-0.6213		
55.00	-0.6623		
60.00	-0.6064		
70.00	-0.6158		
80.00	-0.6002		
90.00	-0.3740		
100.00	-0.0940		
120.00	-0.0193		

Table 6. Continued

(j) M = 0.89

M = 0.891

mfr = 0.694 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.3445	-25.00	0.3563
-15.00	0.3962	-10.00	0.5308
-10.00	0.5440	-4.00	0.8919
-6.00	0.7365	0.00	1.0334
-4.00	0.8857	1.00	0.2326
-2.00	1.0797	4.00	-0.4686
-1.00	1.1964	10.00	-0.6732
0.00	1.0387		
0.25	0.6600		
1.00	0.1720		
2.00	-0.1742		
4.00	-0.4825		
6.00	-0.6209		
10.00	-0.6742		
12.50	-0.7104		
15.00	-0.6901		
20.00	-0.6815		
30.00	-0.6901		
40.00	-0.7022		
45.00	-0.7069		
50.00	-0.6885		
55.00	-0.7079		
60.00	-0.6745		
70.00	-0.7022		
80.00	-0.6888		
90.00	-0.6841		
100.00	-0.6355		
120.00	-0.1116		

M = 0.890

mfr = 0.736 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	0.1360	-25.00	0.1510
-15.00	0.1838	-10.00	0.3417
-10.00	0.3754	-4.00	0.7683
-6.00	0.5882	0.00	1.0997
-4.00	0.7817	1.00	0.3641
-2.00	1.0129	4.00	-0.3480
-1.00	1.1682	10.00	-0.6051
0.00	1.1047		
0.25	0.7164		
1.00	0.2709		
2.00	-0.1054		
4.00	-0.4010		
6.00	-0.5570		
10.00	-0.5847		
12.50	-0.5570		
15.00	-0.6086		
20.00	-0.6483		
30.00	-0.6245		
40.00	-0.6845		
45.00	-0.6709		
50.00	-0.6658		
55.00	-0.6779		
60.00	-0.6712		
70.00	-0.6566		
80.00	-0.6594		
90.00	-0.6273		
100.00	-0.6038		
120.00	-0.0653		

M = 0.891

mfr = 0.792 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-25.00	-0.4694	-25.00	-0.4321
-15.00	-0.1316	-10.00	0.1010
-10.00	0.1233	-4.00	0.6114
-6.00	0.3915	0.00	1.1465
-4.00	0.6097	1.00	0.4724
-2.00	0.9195	4.00	-0.2260
-1.00	1.1120	10.00	-0.4787
0.00	1.1443		
0.25	0.8092		
1.00	0.4141		
2.00	0.0175		
4.00	-0.2644		
6.00	-0.3949		
10.00	-0.4644		
12.50	-0.5317		
15.00	-0.5689		
20.00	-0.5556		
30.00	-0.5613		
40.00	-0.6172		
45.00	-0.6188		
50.00	-0.6033		
55.00	-0.6318		
60.00	-0.6299		
70.00	-0.6255		
80.00	-0.6122		
90.00	-0.5892		
100.00	-0.5222		
120.00	-0.0329		

Table 6. Concluded

(k) M = 0.91

M = 0.912				M = 0.911			
mfr = 0.736 and α = 0.0°				mfr = 0.790 and α = 0.0°			
ϕ = 0°		ϕ = 180°		ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP	X/L	CP
-25.00	0.1734	-25.00	0.1727	-25.00	-0.4334	-25.00	-0.4045
-15.00	0.2011	-10.00	0.3995	-15.00	-0.1151	-10.00	0.1572
-10.00	0.3819	-4.00	0.8015	-10.00	0.1333	-4.00	0.6606
-6.00	0.6376	0.00	1.1086	-6.00	0.4402	0.00	1.1526
-4.00	0.8075	1.00	0.3686	-4.00	0.6339	1.00	0.4603
-2.00	1.0449	4.00	-0.3284	-2.00	0.9285	4.00	-0.2026
-1.00	1.1838	10.00	-0.5698	-1.00	1.1379	10.00	-0.4243
0.00	1.1113			0.00	1.1524		
0.25	0.7298			0.25	0.8651		
1.00	0.2910			1.00	0.4243		
2.00	-0.0317			2.00	0.0237		
4.00	-0.3281			4.00	-0.2474		
6.00	-0.4991			6.00	-0.3785		
10.00	-0.5488			10.00	-0.4213		
12.50	-0.5553			12.50	-0.5033		
15.00	-0.5758			15.00	-0.5123		
20.00	-0.6254			20.00	-0.5506		
30.00	-0.5826			30.00	-0.5313		
40.00	-0.6056			40.00	-0.5512		
45.00	-0.6167			45.00	-0.5636		
50.00	-0.6211			50.00	-0.5667		
55.00	-0.6419			55.00	-0.5692		
60.00	-0.6208			60.00	-0.5990		
70.00	-0.6251			70.00	-0.5879		
80.00	-0.6323			80.00	-0.5733		
90.00	-0.6295			90.00	-0.5928		
100.00	-0.6006			100.00	-0.5581		
120.00	-0.5239			120.00	-0.4872		

Table 7. Pressure coefficients on cowl B

(a) M = 0.60

M = 0.595

mfr = 0.276 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0325	-16.79	1.0302	-6.39	1.0960
-6.39	1.0931	-3.01	1.0284	-3.01	1.0325
-3.01	1.0182	-1.63	0.8680	-1.63	0.8263
-1.63	0.8564	-0.70	0.5303	-0.70	0.5336
-0.70	0.4820	-0.18	-0.0330	-0.18	-0.0003
-0.18	-0.0817	0.00	-0.8479	0.00	-0.7625
0.00	-0.9082	0.13	-1.7731	0.52	-1.3596
0.13	-1.6299	0.52	-2.0834	2.04	-1.3084
0.52	-1.3971	1.15	-1.8773	4.55	-1.4716
1.15	-1.3987	2.04	-1.8529	9.41	-1.2959
2.04	-1.3064	3.17	-1.6635	23.64	-1.0915
3.17	-1.3557	4.55	-1.6099	53.16	-0.4100
4.55	-1.3822	6.76	-1.5424	100.00	-0.2468
6.76	-1.5896	9.41	-1.4984		
9.41	-1.3599	13.37	-1.3822		
13.37	-1.5198	18.08	-1.2620		
18.08	-1.3902	23.64	-1.0970		
23.64	-1.2068	31.47	-0.8329		
31.47	-0.8913	41.05	-0.6511		
41.05	-0.5711	53.16	-0.4829		
53.16	-0.4066	70.31	-0.3552		
70.31	-0.3423	84.88	-0.3091		
84.88	-0.3123	100.00	-0.2431		
100.00	-0.2469	108.98	-0.2108		
108.98	-0.2116				

M = 0.596

mfr = 0.383 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.9270	-16.79	0.9252	-6.39	1.0686
-6.39	1.0732	-3.01	1.0902	-3.01	1.0922
-3.01	1.0884	-1.63	0.9973	-1.63	0.9749
-1.63	0.9937	-0.70	0.7506	-0.70	0.7465
-0.70	0.7064	-0.18	0.2651	-0.18	0.2515
-0.18	0.1877	0.00	-0.5529	0.00	-0.4335
0.00	-0.5993	0.13	-1.4108	0.52	-2.2554
0.13	-1.5631	0.52	-2.2649	2.04	-2.2815
0.52	-2.3698	1.15	-2.5315	4.55	-2.2281
1.15	-2.5679	2.04	-2.3349	9.41	-1.1401
2.04	-2.3630	3.17	-2.3070	23.64	-0.6209
3.17	-2.3345	4.55	-2.2436	53.16	-0.4134
4.55	-2.2440	6.76	-1.4131	100.00	-0.2390
6.76	-1.4463	9.41	-1.0077		
9.41	-1.0776	13.37	-0.8604		
13.37	-0.8515	18.08	-0.7197		
18.08	-0.7417	23.64	-0.6304		
23.64	-0.6435	31.47	-0.5493		
31.47	-0.5526	41.05	-0.4792		
41.05	-0.4854	53.16	-0.4221		
53.16	-0.4328	70.31	-0.3495		
70.31	-0.3635	84.88	-0.3185		
84.88	-0.3210	100.00	-0.2452		
100.00	-0.2499	108.98	-0.2067		
108.98	-0.2042				

M = 0.597

mfr = 0.524 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6629	-16.79	0.6642	-6.39	0.9079
-6.39	0.9115	-3.01	1.0680	-3.01	1.0478
-3.01	1.0672	-1.63	1.0951	-1.63	1.0726
-1.63	1.0913	-0.70	0.9912	-0.70	0.9692
-0.70	0.9634	-0.18	0.6636	-0.18	0.6772
-0.18	0.6226	0.00	0.0067	0.00	0.1259
0.00	-0.0161	0.13	-0.6855	0.52	-1.4745
0.13	-0.9002	0.52	-1.5082	2.04	-1.5799
0.52	-1.4895	1.15	-1.6225	4.55	-1.2813
1.15	-1.7320	2.04	-1.5675	9.41	-0.8396
2.04	-1.5365	3.17	-1.3531	23.64	-0.5492
3.17	-1.4147	4.55	-1.2872	53.16	-0.3728
4.55	-1.3636	6.76	-0.9645	100.00	-0.2182
6.76	-0.9576	9.41	-0.8437		
9.41	-0.8533	13.37	-0.6979		
13.37	-0.7263	18.08	-0.6124		
18.08	-0.6252	23.64	-0.5463		
23.64	-0.5529	31.47	-0.4837		
31.47	-0.4769	41.05	-0.4515		
41.05	-0.4375	53.16	-0.4032		
53.16	-0.3841	70.31	-0.3413		
70.31	-0.3390	84.88	-0.3126		
84.88	-0.3007	100.00	-0.2420		
100.00	-0.2336	108.98	-0.1944		
108.98	-0.1870				

M = 0.594

mfr = 0.526 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6988	-16.79	0.6575	-6.39	0.8693
-6.39	0.9429	-3.01	1.0655	-3.01	1.0365
-3.01	1.0865	-1.63	1.0899	-1.63	1.0807
-1.63	1.0839	-0.70	0.9906	-0.70	1.0134
-0.70	0.9370	-0.18	0.6545	-0.18	0.7639
-0.18	0.5661	0.00	0.0752	0.00	0.2562
0.00	-0.1582	0.13	-0.7275	0.52	-1.1596
0.13	-1.0641	0.52	-1.3895	2.04	-1.3177
0.52	-1.7089	1.15	-1.6532	4.55	-1.0683
1.15	-1.9852	2.04	-1.5315	9.41	-0.7078
2.04	-1.8842	3.17	-1.3793	23.64	-0.4908
3.17	-1.8061	4.55	-1.2992	53.16	-0.3606
4.55	-1.6648	6.76	-0.9549	100.00	-0.2191
6.76	-1.0195	9.41	-0.8131		
9.41	-0.9170	13.37	-0.6971		
13.37	-0.7935	18.08	-0.6198		
18.08	-0.6732	23.64	-0.5437		
23.64	-0.6056	31.47	-0.4904		
31.47	-0.5105	41.05	-0.4468		
41.05	-0.4614	53.16	-0.3906		
53.16	-0.4133	70.31	-0.3281		
70.31	-0.3505	84.88	-0.3006		
84.88	-0.3050	100.00	-0.2364		
100.00	-0.2380	108.98	-0.1971		
108.98	-0.1909				

M = 0.594

mfr = 0.524 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7337	-16.79	0.6660	-6.39	0.8313
-6.39	0.9717	-3.01	1.0606	-3.01	1.0010
-3.01	1.0889	-1.63	1.0915	-1.63	1.0826
-1.63	1.0720	-0.70	0.9929	-0.70	1.0421
-0.70	0.8772	-0.18	0.6767	-0.18	0.8466
-0.18	0.4549	0.00	-0.0567	0.00	0.3682
0.00	-0.2637	0.13	-0.7288	0.52	-0.8197
0.13	-1.2450	0.52	-1.4129	2.04	-1.0276
0.52	-2.0794	1.15	-1.6605	4.55	-0.9328
1.15	-2.1648	2.04	-1.5250	9.41	-0.6343
2.04	-2.2030	3.17	-1.3581	23.64	-0.4572
3.17	-2.1505	4.55	-1.2054	53.16	-0.3372
4.55	-1.9892	6.76	-0.9590	100.00	-0.2142
6.76	-1.1107	9.41	-0.8434		
9.41	-0.9991	13.37	-0.7246		
13.37	-0.8428	18.08	-0.6165		
18.08	-0.7324	23.64	-0.5363		
23.64	-0.6337	31.47	-0.4875		
31.47	-0.5440	41.05	-0.4314		
41.05	-0.4801	53.16	-0.3946		
53.16	-0.4242	70.31	-0.3354		
70.31	-0.3603	84.88	-0.3105		
84.88	-0.3165	100.00	-0.2394		
100.00	-0.2447	108.98	-0.1914		
108.98	-0.1988				

M = 0.595

mfr = 0.524 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7609	-16.79	0.6570	-6.39	0.7816
-6.39	1.0004	-3.01	1.0654	-3.01	0.9775
-3.01	1.0936	-1.63	1.0891	-1.63	1.0745
-1.63	1.0536	-0.70	0.9984	-0.70	1.0621
-0.70	0.8304	-0.18	0.6783	-0.18	0.8882
-0.18	0.3529	0.00	-0.0156	0.00	0.4828
0.00	-0.4206	0.13	-0.6498	0.52	-0.6521
0.13	-1.4106	0.52	-1.3425	2.04	-0.8216
0.52	-2.2338	1.15	-1.6120	4.55	-0.7535
1.15	-2.3846	2.04	-1.4977	9.41	-0.5804
2.04	-2.4683	3.17	-1.4162	23.64	-0.4051
3.17	-2.3026	4.55	-1.2349	53.16	-0.3168
4.55	-2.2608	6.76	-0.9529	100.00	-0.2006
6.76	-1.5568	9.41	-0.8163		
9.41	-1.0543	13.37	-0.6972		
13.37	-0.8964	18.08	-0.6225		
18.08	-0.7591	23.64	-0.5532		
23.64	-0.6790	31.47	-0.4957		
31.47	-0.5727	41.05	-0.4453		
41.05	-0.5101	53.16	-0.3974		
53.16	-0.4369	70.31	-0.3309		
70.31	-0.3753	84.88	-0.3191		
84.88	-0.3264	100.00	-0.2470		
100.00	-0.2427	108.98	-0.1991		
108.98	-0.1969				

Table 7. Continued

(a) Continued

M = 0.595

mfr = 0.570 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5529	-16.79	0.5481	-6.39	0.8254
-6.39	0.8243	-3.01	1.0199	-3.01	1.0137
-3.01	1.0315	-1.63	1.0844	-1.63	1.0852
-1.63	1.0898	-0.70	1.0389	-0.70	1.0330
-0.70	1.0194	-0.18	0.7795	-0.18	0.8002
-0.18	0.7318	0.00	0.1958	0.00	0.2508
0.00	0.1742	0.13	-0.4199	0.52	-1.0965
0.13	-0.6713	0.52	-1.1149	2.04	-1.2861
0.52	-1.1461	1.15	-1.2060	4.55	-1.0722
1.15	-1.3527	2.04	-1.3099	9.41	-0.7407
2.04	-1.3549	3.17	-1.1905	23.64	-0.4998
3.17	-1.2137	4.55	-1.0739	53.16	-0.3554
4.55	-1.1593	6.76	-0.9278	100.00	-0.2204
6.76	-0.8991	9.41	-0.7566		
9.41	-0.7817	13.37	-0.6531		
13.37	-0.6471	18.08	-0.5738		
18.08	-0.6077	23.64	-0.5033		
23.64	-0.5210	31.47	-0.4615		
31.47	-0.4684	41.05	-0.4205		
41.05	-0.4111	53.16	-0.3727		
53.16	-0.3753	70.31	-0.3100		
70.31	-0.3333	84.88	-0.2939		
84.88	-0.2923	100.00	-0.2231		
100.00	-0.2250	108.98	-0.1759		
108.98	-0.1807				

M = 0.596

mfr = 0.622 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4153	-16.79	0.4012	-6.39	0.7106
-6.39	0.7261	-3.01	0.9584	-3.01	0.9523
-3.01	0.9690	-1.63	1.0641	-1.63	1.0783
-1.63	1.0740	-0.70	1.0800	-0.70	1.0776
-0.70	1.0703	-0.18	0.8833	-0.18	0.9188
-0.18	0.8688	0.00	0.4177	0.00	0.4550
0.00	0.3555	0.13	-0.1371	0.52	-0.5454
0.13	-0.3616	0.52	-0.7940	2.04	-0.9514
0.52	-0.8186	1.15	-0.9733	4.55	-0.8626
1.15	-1.0040	2.04	-1.0225	9.41	-0.6641
2.04	-1.0388	3.17	-0.9567	23.64	-0.4544
3.17	-1.0272	4.55	-0.8957	53.16	-0.3552
4.55	-0.8543	6.76	-0.7568	100.00	-0.2116
6.76	-0.8029	9.41	-0.7072		
9.41	-0.6701	13.37	-0.5649		
13.37	-0.5956	18.08	-0.5194		
18.08	-0.5211	23.64	-0.4709		
23.64	-0.4870	31.47	-0.4282		
31.47	-0.4267	41.05	-0.3886		
41.05	-0.4020	53.16	-0.3514		
53.16	-0.3558	70.31	-0.3018		
70.31	-0.3175	84.88	-0.2832		
84.88	-0.2876	100.00	-0.2156		
100.00	-0.2168	108.98	-0.1679		
108.98	-0.1773				

M = 0.597

mfr = 0.620 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4514	-16.79	0.4085	-6.39	0.6688
-6.39	0.7845	-3.01	0.9430	-3.01	0.9126
-3.01	0.9904	-1.63	1.0612	-1.63	1.0579
-1.63	1.0871	-0.70	1.0789	-0.70	1.0813
-0.70	1.0516	-0.18	0.9030	-0.18	0.9447
-0.18	0.7876	0.00	0.4138	0.00	0.5792
0.00	0.2972	0.13	-0.1312	0.52	-0.5049
0.13	-0.5546	0.52	-0.7003	2.04	-0.8191
0.52	-1.0937	1.15	-0.9542	4.55	-0.7038
1.15	-1.2756	2.04	-1.0339	9.41	-0.5932
2.04	-1.2824	3.17	-0.9648	23.64	-0.4237
3.17	-1.1836	4.55	-0.8609	53.16	-0.3402
4.55	-1.0321	6.76	-0.7597	100.00	-0.2043
6.76	-0.8703	9.41	-0.6691		
9.41	-0.7762	13.37	-0.5814		
13.37	-0.6362	18.08	-0.5020		
18.08	-0.5964	23.64	-0.4626		
23.64	-0.5227	31.47	-0.4292		
31.47	-0.4720	41.05	-0.3798		
41.05	-0.4171	53.16	-0.3520		
53.16	-0.3695	70.31	-0.2946		
70.31	-0.3298	84.88	-0.2823		
84.88	-0.2958	100.00	-0.2174		
100.00	-0.2216	108.98	-0.1693		
108.98	-0.1776				

M = 0.596

mfr = 0.625 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4916	-16.79	0.3995	-6.39	0.5918
-6.39	0.8010	-3.01	0.9722	-3.01	0.8457
-3.01	1.0386	-1.63	1.0660	-1.63	1.0341
-1.63	1.0884	-0.70	1.0784	-0.70	1.0879
-0.70	1.0102	-0.18	0.8890	-0.18	1.0052
-0.18	0.7239	0.00	0.4119	0.00	0.6669
0.00	0.0841	0.13	-0.2132	0.52	-0.2469
0.13	-0.7381	0.52	-0.7751	2.04	-0.5674
0.52	-1.3464	1.15	-0.9774	4.55	-0.6536
1.15	-1.5383	2.04	-0.9911	9.41	-0.4742
2.04	-1.4650	3.17	-0.9555	23.64	-0.3774
3.17	-1.3823	4.55	-0.8797	53.16	-0.3031
4.55	-1.3032	6.76	-0.7598	100.00	-0.1991
6.76	-1.0027	9.41	-0.6937		
9.41	-0.8477	13.37	-0.5828		
13.37	-0.7167	18.08	-0.5090		
18.08	-0.6364	23.64	-0.4707		
23.64	-0.5787	31.47	-0.4271		
31.47	-0.4959	41.05	-0.3906		
41.05	-0.4524	53.16	-0.3510		
53.16	-0.3906	70.31	-0.3031		
70.31	-0.3413	84.88	-0.2827		
84.88	-0.2982	100.00	-0.2177		
100.00	-0.2295	108.98	-0.1762		
108.98	-0.1828				

M = 0.595

mfr = 0.620 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5184	-16.79	0.3922	-6.39	0.5647
-6.39	0.8681	-3.01	0.9460	-3.01	0.8035
-3.01	1.0609	-1.63	1.0634	-1.63	1.0045
-1.63	1.0856	-0.70	1.0740	-0.70	1.0952
-0.70	0.9786	-0.18	0.8808	-0.18	1.0515
-0.18	0.6300	0.00	0.3928	0.00	0.7681
0.00	-0.0236	0.13	-0.1579	0.52	-0.0305
0.13	-0.9259	0.52	-0.7987	2.04	-0.4419
0.52	-1.5344	1.15	-0.9489	4.55	-0.4354
1.15	-1.7626	2.04	-1.0085	9.41	-0.3619
2.04	-1.7669	3.17	-0.9489	23.64	-0.3507
3.17	-1.7330	4.55	-0.8835	53.16	-0.2784
4.55	-1.4407	6.76	-0.7756	100.00	-0.1846
6.76	-1.0425	9.41	-0.6926		
9.41	-0.9333	13.37	-0.5812		
13.37	-0.8023	18.08	-0.5243		
18.08	-0.7098	23.64	-0.4787		
23.64	-0.6003	31.47	-0.4164		
31.47	-0.5334	41.05	-0.3815		
41.05	-0.4729	53.16	-0.3480		
53.16	-0.4128	70.31	-0.2900		
70.31	-0.3539	84.88	-0.2751		
84.88	-0.3102	100.00	-0.2110		
100.00	-0.2321	108.98	-0.1669		
108.98	-0.1932				

M = 0.597

mfr = 0.652 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.2869	-16.79	0.3016	-6.39	0.6379
-6.39	0.6417	-3.01	0.9114	-3.01	0.9150
-3.01	0.9262	-1.63	1.0461	-1.63	1.0670
-1.63	1.0516	-0.70	1.0902	-0.70	1.0924
-0.70	1.0877	-0.18	0.9537	-0.18	0.9420
-0.18	0.9325	0.00	0.5188	0.00	0.6071
0.00	0.4583	0.13	-0.0603	0.52	-0.5876
0.13	-0.1382	0.52	-0.6370	2.04	-0.9610
0.52	-0.6620	1.15	-0.8312	4.55	-0.7758
1.15	-0.8324	2.04	-0.9208	9.41	-0.6193
2.04	-0.9158	3.17	-0.8529	23.64	-0.4352
3.17	-0.8554	4.55	-0.7947	53.16	-0.3369
4.55	-0.8345	6.76	-0.7052	100.00	-0.2063
6.76	-0.6861	9.41	-0.6370		
9.41	-0.6484	13.37	-0.5464		
13.37	-0.5405	18.08	-0.4834		
18.08	-0.4969	23.64	-0.4340		
23.64	-0.4415	31.47	-0.4013		
31.47	-0.4216	41.05	-0.3748		
41.05	-0.3824	53.16	-0.3452		
53.16	-0.3448	70.31	-0.2921		
70.31	-0.3087	84.88	-0.2779		
84.88	-0.2815	100.00	-0.2069		
100.00	-0.2162	108.98	-0.1649		
108.98	-0.1685				

Table 7. Continued

(a) Continued

M = 0.595

mfr = 0.706 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.1114	-16.79	0.1028	-6.39	0.4819
-6.39	0.4619	-3.01	0.7913	-3.01	0.7977
-3.01	0.8055	-1.63	0.9842	-1.63	0.9921
-1.63	1.0062	-0.70	1.0906	-0.70	1.0851
-0.70	1.0913	-0.18	1.0250	-0.18	1.0280
-0.18	0.9931	0.00	0.6653	0.00	0.6973
0.00	0.6478	0.13	0.2282	0.52	-0.2012
0.13	0.1114	0.52	-0.2651	2.04	-0.6015
0.52	-0.3789	1.15	-0.5791	4.55	-0.6790
1.15	-0.5485	2.04	-0.6867	9.41	-0.5495
2.04	-0.6935	3.17	-0.6583	23.64	-0.4017
3.17	-0.6609	4.55	-0.6205	53.16	-0.3337
4.55	-0.6725	6.76	-0.5962	100.00	-0.1959
6.76	-0.5748	9.41	-0.5264		
9.41	-0.5301	13.37	-0.4750		
13.37	-0.4744	18.08	-0.4277		
18.08	-0.4345	23.64	-0.3952		
23.64	-0.4204	31.47	-0.3832		
31.47	-0.3762	41.05	-0.3429		
41.05	-0.3584	53.16	-0.3311		
53.16	-0.3253	70.31	-0.2771		
70.31	-0.2948	84.88	-0.2703		
84.88	-0.2685	100.00	-0.2002		
100.00	-0.2017	108.98	-0.1623		
108.98	-0.1597				

M = 0.596

mfr = 0.705 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.1590	-16.79	0.1028	-6.39	0.4191
-6.39	0.5290	-3.01	0.7989	-3.01	0.7259
-3.01	0.8972	-1.63	0.9834	-1.63	0.9565
-1.63	1.0202	-0.70	1.0913	-0.70	1.0659
-0.70	1.0929	-0.18	1.0288	-0.18	1.0559
-0.18	0.9647	0.00	0.7093	0.00	0.8018
0.00	0.4950	0.13	0.1855	0.52	-0.0716
0.13	-0.0725	0.52	-0.3303	2.04	-0.4852
0.52	-0.5546	1.15	-0.5789	4.55	-0.5377
1.15	-0.6818	2.04	-0.5954	9.41	-0.3874
2.04	-0.8457	3.17	-0.6762	23.64	-0.3692
3.17	-0.8294	4.55	-0.6561	53.16	-0.3055
4.55	-0.7912	6.76	-0.5996	100.00	-0.1936
6.76	-0.6986	9.41	-0.5224		
9.41	-0.6085	13.37	-0.4723		
13.37	-0.5542	18.08	-0.4369		
18.08	-0.5321	23.64	-0.4033		
23.64	-0.4421	31.47	-0.3941		
31.47	-0.4086	41.05	-0.3656		
41.05	-0.3814	53.16	-0.3346		
53.16	-0.3447	70.31	-0.2876		
70.31	-0.3133	84.88	-0.2721		
84.88	-0.2735	100.00	-0.2066		
100.00	-0.2107	108.98	-0.1720		
108.98	-0.1641				

M = 0.595

mfr = 0.707 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.1904	-16.79	0.1245	-6.39	0.3212
-6.39	0.5986	-3.01	0.7882	-3.01	0.6750
-3.01	0.9118	-1.63	0.9809	-1.63	0.9042
-1.63	1.0545	-0.70	1.0871	-0.70	1.0475
-0.70	1.0860	-0.18	1.0163	-0.18	1.0806
-0.18	0.9066	0.00	0.6749	0.00	0.8651
0.00	0.4129	0.13	0.2213	0.52	0.1292
0.13	-0.2345	0.52	-0.3143	2.04	-0.3662
0.52	-0.7438	1.15	-0.5127	4.55	-0.4070
1.15	-0.9888	2.04	-0.6620	9.41	-0.3722
2.04	-0.9951	3.17	-0.6626	23.64	-0.3090
3.17	-1.0152	4.55	-0.6266	53.16	-0.2919
4.55	-0.9735	6.76	-0.5623	100.00	-0.1773
6.76	-0.7973	9.41	-0.5416		
9.41	-0.6981	13.37	-0.4601		
13.37	-0.6083	18.08	-0.4359		
18.08	-0.5712	23.64	-0.4105		
23.64	-0.4936	31.47	-0.3907		
31.47	-0.4621	41.05	-0.3616		
41.05	-0.4065	53.16	-0.3294		
53.16	-0.3672	70.31	-0.2867		
70.31	-0.3195	84.88	-0.2767		
84.88	-0.2807	100.00	-0.2123		
100.00	-0.2104	108.98	-0.1714		
108.98	-0.1678				

M = 0.597

mfr = 0.704 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.2437	-16.79	0.0994	-6.39	0.2653
-6.39	0.6609	-3.01	0.7884	-3.01	0.6083
-3.01	0.9497	-1.63	0.9748	-1.63	0.8488
-1.63	1.0683	-0.70	1.0865	-0.70	1.0326
-0.70	1.0771	-0.18	1.0189	-0.18	1.0900
-0.18	0.8364	0.00	0.6614	0.00	0.9637
0.00	0.3283	0.13	0.2476	0.52	0.2852
0.13	-0.4462	0.52	-0.3232	2.04	-0.2086
0.52	-0.9878	1.15	-0.5137	4.55	-0.2921
1.15	-1.2046	2.04	-0.6336	9.41	-0.2950
2.04	-1.2629	3.17	-0.7018	23.64	-0.2756
3.17	-1.1563	4.55	-0.6412	53.16	-0.2650
4.55	-1.1211	6.76	-0.5789	100.00	-0.1728
6.76	-0.8828	9.41	-0.5278		
9.41	-0.7861	13.37	-0.4672		
13.37	-0.6588	18.08	-0.4355		
18.08	-0.5903	23.64	-0.4137		
23.64	-0.5344	31.47	-0.3978		
31.47	-0.4843	41.05	-0.3620		
41.05	-0.4311	53.16	-0.3279		
53.16	-0.3788	70.31	-0.2860		
70.31	-0.3334	84.88	-0.2798		
84.88	-0.2885	100.00	-0.2169		
100.00	-0.2232	108.98	-0.1744		
108.98	-0.1778				

M = 0.597

mfr = 0.745 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.0739	-16.79	-0.0883	-6.39	0.3210
-6.39	0.3304	-3.01	0.7018	-3.01	0.6665
-3.01	0.6908	-1.63	0.9065	-1.63	0.9490
-1.63	0.9159	-0.70	1.0747	-0.70	1.0717
-0.70	1.0825	-0.18	1.0688	-0.18	1.0658
-0.18	1.0610	0.00	0.7935	0.00	0.8454
0.00	0.7697	0.13	0.4015	0.52	-0.0196
0.13	0.2593	0.52	-0.0460	2.04	-0.4781
0.52	-0.1878	1.15	-0.3364	4.55	-0.5098
1.15	-0.3434	2.04	-0.5709	9.41	-0.4634
2.04	-0.5382	3.17	-0.5198	23.64	-0.3705
3.17	-0.5805	4.55	-0.5033	53.16	-0.3041
4.55	-0.5110	6.76	-0.4669	100.00	-0.1930
6.76	-0.4802	9.41	-0.4534		
9.41	-0.4228	13.37	-0.4387		
13.37	-0.4222	18.08	-0.3934		
18.08	-0.4081	23.64	-0.3693		
23.64	-0.3763	31.47	-0.3594		
31.47	-0.3460	41.05	-0.3335		
41.05	-0.3465	53.16	-0.3087		
53.16	-0.3157	70.31	-0.2668		
70.31	-0.2896	84.88	-0.2618		
84.88	-0.2635	100.00	-0.1958		
100.00	-0.1951	108.98	-0.1490		
108.98	-0.1549				

M = 0.596

mfr = 0.794 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.3148	-16.79	-0.3128	-6.39	0.1589
-6.39	0.1451	-3.01	0.5324	-3.01	0.5333
-3.01	0.5722	-1.63	0.7950	-1.63	0.8458
-1.63	0.8229	-0.70	1.0478	-0.70	1.0266
-0.70	1.0483	-0.18	1.0878	-0.18	1.0889
-0.18	1.0896	0.00	0.9174	0.00	0.9109
0.00	0.8829	0.13	0.6252	0.52	0.1985
0.13	0.5059	0.52	0.1398	2.04	-0.2864
0.52	0.0454	1.15	-0.1194	4.55	-0.4227
1.15	-0.1106	2.04	-0.3075	9.41	-0.3868
2.04	-0.3180	3.17	-0.3551	23.64	-0.3486
3.17	-0.3999	4.55	-0.4051	53.16	-0.2940
4.55	-0.4338	6.76	-0.4121	100.00	-0.1859
6.76	-0.4401	9.41	-0.4045		
9.41	-0.4015	13.37	-0.3757		
13.37	-0.3992	18.08	-0.3369		
18.08	-0.3603	23.64	-0.3304		
23.64	-0.3514	31.47	-0.3369		
31.47	-0.3368	41.05	-0.3245		
41.05	-0.3310	53.16	-0.3073		
53.16	-0.3002	70.31	-0.2672		
70.31	-0.2710	84.88	-0.2604		
84.88	-0.2486	100.00	-0.1895		
100.00	-0.1900	108.98	-0.1593		
108.98	-0.1435				

Table 7. Continued

(a) Concluded

M = 0.597

mfr = 0.792 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2550	-16.79	-0.3354	-6.39	0.0582
-6.39	0.1981	-3.01	0.5445	-3.01	0.4214
-3.01	0.6194	-1.63	0.7962	-1.63	0.7848
-1.63	0.8744	-0.70	1.0328	-0.70	0.9998
-0.70	1.0782	-0.18	1.0862	-0.18	1.0903
-0.18	1.0704	0.00	0.9078	0.00	0.9911
0.00	0.8145	0.13	0.6119	0.52	0.3514
0.13	0.3484	0.52	0.1524	2.04	-0.1599
0.52	-0.1709	1.15	-0.1316	4.55	-0.3142
1.15	-0.3394	2.04	-0.2884	9.41	-0.3213
2.04	-0.5213	3.17	-0.3665	23.64	-0.2925
3.17	-0.5380	4.55	-0.3987	53.16	-0.2679
4.55	-0.5792	6.76	-0.3905	100.00	-0.1775
6.76	-0.4885	9.41	-0.4005		
9.41	-0.4364	13.37	-0.3665		
13.37	-0.4322	18.08	-0.3588		
18.08	-0.4093	23.64	-0.3336		
23.64	-0.3931	31.47	-0.3316		
31.47	-0.3665	41.05	-0.3150		
41.05	-0.3415	53.16	-0.2984		
53.16	-0.3165	70.31	-0.2614		
70.31	-0.2831	84.88	-0.2534		
84.88	-0.2623	100.00	-0.1919		
100.00	-0.1975	108.98	-0.1494		
108.98	-0.1527				

M = 0.596

mfr = 0.790 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.1765	-16.79	-0.3209	-6.39	-0.0325
-6.39	0.2975	-3.01	0.5402	-3.01	0.3673
-3.01	0.7109	-1.63	0.7862	-1.63	0.7090
-1.63	0.9106	-0.70	1.0189	-0.70	0.9488
-0.70	1.0865	-0.18	1.0848	-0.18	1.0860
-0.18	1.0467	0.00	0.8906	0.00	1.0372
0.00	0.7103	0.13	0.5914	0.52	0.4600
0.13	0.1877	0.52	0.1545	2.04	0.0018
0.52	-0.2648	1.15	-0.1559	4.55	-0.1836
1.15	-0.4783	2.04	-0.3409	9.41	-0.2107
2.04	-0.6373	3.17	-0.4133	23.64	-0.2542
3.17	-0.7048	4.55	-0.4581	53.16	-0.2478
4.55	-0.6425	6.76	-0.3851	100.00	-0.1653
6.76	-0.6493	9.41	-0.4098		
9.41	-0.5186	13.37	-0.3868		
13.37	-0.5417	18.08	-0.3845		
18.08	-0.4804	23.64	-0.3533		
23.64	-0.4522	31.47	-0.3532		
31.47	-0.4098	41.05	-0.3384		
41.05	-0.3837	53.16	-0.2993		
53.16	-0.3471	70.31	-0.2709		
70.31	-0.3124	84.88	-0.2524		
84.88	-0.2753	100.00	-0.1869		
100.00	-0.2125	108.98	-0.1468		
108.98	-0.1733				

M = 0.593

mfr = 0.791 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.1258	-16.79	-0.3211	-6.39	-0.1378
-6.39	0.3662	-3.01	0.5228	-3.01	0.1970
-3.01	0.7523	-1.63	0.7871	-1.63	0.6448
-1.63	0.9639	-0.70	1.0225	-0.70	0.8913
-0.70	1.0888	-0.18	1.0848	-0.18	1.0717
-0.18	1.0188	0.00	0.8874	0.00	1.0551
0.00	0.6321	0.13	0.5903	0.52	0.5678
0.13	0.0575	0.52	0.1302	2.04	0.1409
0.52	-0.4582	1.15	-0.1425	4.55	-0.0969
1.15	-0.6556	2.04	-0.3229	9.41	-0.1461
2.04	-0.7599	3.17	-0.3608	23.64	-0.2036
3.17	-0.7762	4.55	-0.3934	53.16	-0.2125
4.55	-0.7962	6.76	-0.3738	100.00	-0.1574
6.76	-0.6788	9.41	-0.3726		
9.41	-0.6398	13.37	-0.3519		
13.37	-0.5564	18.08	-0.3365		
18.08	-0.5082	23.64	-0.3317		
23.64	-0.4777	31.47	-0.3249		
31.47	-0.4340	41.05	-0.3100		
41.05	-0.3834	53.16	-0.2882		
53.16	-0.3539	70.31	-0.2559		
70.31	-0.3085	84.88	-0.2553		
84.88	-0.2717	100.00	-0.1912		
100.00	-0.2080	108.98	-0.1502		
108.98	-0.1632				

Table 7. Continued

(b) M = 0.69

M = 0.692

mfr = 0.273 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0732	-16.79	1.0680	-6.39	1.1312
-6.39	1.1276	-3.01	1.0733	-3.01	1.0734
-3.01	1.0677	-1.63	0.9420	-1.63	0.8888
-1.63	0.9233	-0.70	0.6445	-0.70	0.6340
-0.70	0.5999	-0.18	0.1764	-0.18	0.1615
-0.18	0.0961	0.00	-0.4939	0.00	-0.4806
0.00	-0.5797	0.13	-1.2810	0.52	-1.4170
0.13	-1.3621	0.52	-1.5314	2.04	-1.3186
0.52	-1.3605	1.15	-1.2576	4.55	-1.3067
1.15	-1.2916	2.04	-1.0263	9.41	-1.3754
2.04	-1.2704	3.17	-1.0521	23.64	-1.2671
3.17	-1.2279	4.55	-1.0081	53.16	-0.6376
4.55	-1.3155	6.76	-1.1188	100.00	-0.2647
6.76	-1.3167	9.41	-1.1203		
9.41	-1.3520	13.37	-1.0993		
13.37	-1.3520	18.08	-1.0397		
18.08	-1.3252	23.64	-1.0898		
23.64	-1.2517	31.47	-1.0611		
31.47	-1.1044	41.05	-0.9789		
41.05	-0.7742	53.16	-0.7715		
53.16	-0.6231	70.31	-0.4691		
70.31	-0.4075	84.88	-0.3545		
84.88	-0.3155	100.00	-0.2503		
100.00	-0.2568	108.98	-0.2308		
108.98	-0.2252				

M = 0.694

mfr = 0.387 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.9588	-16.79	0.9589	-6.39	1.1020
-6.39	1.0982	-3.01	1.1267	-3.01	1.1269
-3.01	1.1247	-1.63	1.0604	-1.63	1.0248
-1.63	1.0502	-0.70	0.8256	-0.70	0.8448
-0.70	0.8173	-0.18	0.4174	-0.18	0.4307
-0.18	0.3737	0.00	-0.2510	0.00	-0.1946
0.00	-0.3102	0.13	-0.9701	0.52	-1.6420
0.13	-1.1073	0.52	-1.7015	2.04	-2.0112
0.52	-1.7387	1.15	-1.9194	4.55	-1.9917
1.15	-1.9330	2.04	-1.9941	9.41	-1.8581
2.04	-2.0266	3.17	-2.0226	23.64	-0.5143
3.17	-2.0613	4.55	-2.0008	53.16	-0.4340
4.55	-1.9969	6.76	-1.9151	100.00	-0.2496
6.76	-1.9376	9.41	-1.8600		
9.41	-1.8487	13.37	-1.6967		
13.37	-1.7153	18.08	-0.8274		
18.08	-0.8731	23.64	-0.5562		
23.64	-0.5462	31.47	-0.4947		
31.47	-0.4898	41.05	-0.4813		
41.05	-0.4755	53.16	-0.4391		
53.16	-0.4302	70.31	-0.3650		
70.31	-0.3830	84.88	-0.3342		
84.88	-0.3379	100.00	-0.2501		
100.00	-0.2546	108.98	-0.2062		
108.98	-0.2087				

M = 0.694

mfr = 0.519 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7409	-16.79	0.7327	-6.39	0.9623
-6.39	0.9659	-3.01	1.1046	-3.01	1.0940
-3.01	1.1104	-1.63	1.1269	-1.63	1.1158
-1.63	1.1243	-0.70	1.0275	-0.70	1.0164
-0.70	1.0083	-0.18	0.7350	-0.18	0.7232
-0.18	0.6838	0.00	0.1634	0.00	0.2619
0.00	0.1227	0.13	-0.4897	0.52	-1.1939
0.13	-0.6427	0.52	-1.1963	2.04	-1.5776
0.52	-1.2740	1.15	-1.4490	4.55	-1.5691
1.15	-1.3709	2.04	-1.5995	9.41	-1.4590
2.04	-1.5986	3.17	-1.6569	23.64	-0.5756
3.17	-1.6307	4.55	-1.6047	53.16	-0.4138
4.55	-1.6210	6.76	-1.4670	100.00	-0.2350
6.76	-1.5019	9.41	-1.3107		
9.41	-1.3481	13.37	-0.6336		
13.37	-0.6692	18.08	-0.6202		
18.08	-0.6245	23.64	-0.5685		
23.64	-0.5729	31.47	-0.5194		
31.47	-0.5133	41.05	-0.4664		
41.05	-0.4613	53.16	-0.4183		
53.16	-0.4061	70.31	-0.3508		
70.31	-0.3574	84.88	-0.3230		
84.88	-0.3166	100.00	-0.2412		
100.00	-0.2363	108.98	-0.1909		
108.98	-0.1817				

M = 0.696

mfr = 0.562 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6290	-16.79	0.6262	-6.39	0.8874
-6.39	0.8879	-3.01	1.0717	-3.01	1.0683
-3.01	1.0799	-1.63	1.1216	-1.63	1.1221
-1.63	1.1247	-0.70	1.0693	-0.70	1.0644
-0.70	1.0611	-0.18	0.8273	-0.18	0.8367
-0.18	0.8056	0.00	0.3206	0.00	0.3725
0.00	0.2940	0.13	-0.3074	0.52	-0.9065
0.13	-0.4673	0.52	-0.9783	2.04	-1.4215
0.52	-1.0545	1.15	-1.2222	4.55	-1.3620
1.15	-1.2352	2.04	-1.4210	9.41	-1.0298
2.04	-1.3413	3.17	-1.4556	23.64	-0.5522
3.17	-1.4653	4.55	-1.3573	53.16	-0.3959
4.55	-1.3922	6.76	-1.1584	100.00	-0.2288
6.76	-1.2798	9.41	-0.9807		
9.41	-1.0434	13.37	-0.6556		
13.37	-0.6523	18.08	-0.6074		
18.08	-0.6234	23.64	-0.5503		
23.64	-0.5608	31.47	-0.4986		
31.47	-0.4959	41.05	-0.4474		
41.05	-0.4476	53.16	-0.3970		
53.16	-0.3999	70.31	-0.3378		
70.31	-0.3493	84.88	-0.3100		
84.88	-0.3108	100.00	-0.2334		
100.00	-0.2330	108.98	-0.1821		
108.98	-0.1845				

M = 0.694

mfr = 0.610 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4835	-16.79	0.4758	-6.39	0.7945
-6.39	0.7836	-3.01	1.0039	-3.01	1.0035
-3.01	1.0270	-1.63	1.1089	-1.63	1.1166
-1.63	1.1082	-0.70	1.1098	-0.70	1.1057
-0.70	1.1014	-0.18	0.9201	-0.18	0.9300
-0.18	0.8984	0.00	0.4153	0.00	0.4910
0.00	0.4289	0.13	-0.1236	0.52	-0.6709
0.13	-0.1936	0.52	-0.7055	2.04	-1.1509
0.52	-0.7995	1.15	-0.9904	4.55	-1.0673
1.15	-0.9410	2.04	-1.1419	9.41	-0.7506
2.04	-1.2195	3.17	-1.1162	23.64	-0.5302
3.17	-1.1641	4.55	-1.0236	53.16	-0.3819
4.55	-1.1422	6.76	-0.9372	100.00	-0.2234
6.76	-0.9313	9.41	-0.8004		
9.41	-0.8316	13.37	-0.6239		
13.37	-0.6452	18.08	-0.5892		
18.08	-0.5810	23.64	-0.5198		
23.64	-0.5244	31.47	-0.4664		
31.47	-0.4770	41.05	-0.4238		
41.05	-0.4331	53.16	-0.3866		
53.16	-0.3898	70.31	-0.3226		
70.31	-0.3411	84.88	-0.3021		
84.88	-0.3049	100.00	-0.2296		
100.00	-0.2247	108.98	-0.1790		
108.98	-0.1776				

M = 0.693

mfr = 0.642 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3704	-16.79	0.3684	-6.39	0.7270
-6.39	0.7310	-3.01	0.9724	-3.01	0.9748
-3.01	0.9728	-1.63	1.0829	-1.63	1.1023
-1.63	1.0857	-0.70	1.1212	-0.70	1.1182
-0.70	1.1167	-0.18	0.9714	-0.18	0.9936
-0.18	0.9522	0.00	0.5361	0.00	0.5849
0.00	0.5497	0.13	0.0419	0.52	-0.5021
0.13	-0.0955	0.52	-0.5789	2.04	-1.0385
0.52	-0.6507	1.15	-0.8923	4.55	-0.8682
1.15	-0.8127	2.04	-0.9412	9.41	-0.7188
2.04	-1.0056	3.17	-0.9900	23.64	-0.5016
3.17	-0.9347	4.55	-0.9393	53.16	-0.3833
4.55	-0.9660	6.76	-0.8601	100.00	-0.2217
6.76	-0.7764	9.41	-0.7183		
9.41	-0.7326	13.37	-0.6026		
13.37	-0.5898	18.08	-0.5466		
18.08	-0.5789	23.64	-0.4788		
23.64	-0.4979	31.47	-0.4510		
31.47	-0.4472	41.05	-0.4183		
41.05	-0.4195	53.16	-0.3841		
53.16	-0.3746	70.31	-0.3187		
70.31	-0.3381	84.88	-0.3003		
84.88	-0.3011	100.00	-0.2210		
100.00	-0.2264	108.98	-0.1743		
108.98	-0.1740				

Table 7. Continued

(b) Concluded

M = 0.695

mfr = 0.697 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	0.1931	-16.79	0.1778	-6.39	0.5648
-6.39	0.5678	-3.01	0.8651	-3.01	0.8449
-3.01	0.8828	-1.63	1.0338	-1.63	1.0555
-1.63	1.0405	-0.70	1.1270	-0.70	1.1197
-0.70	1.1245	-0.18	1.0455	-0.18	1.0540
-0.18	1.0476	0.00	0.6792	0.00	0.7347
0.00	0.6916	0.13	0.2649	0.52	-0.1773
0.13	0.1604	0.52	-0.2596	2.04	-0.6762
0.52	-0.3055	1.15	-0.4895	4.55	-0.7325
1.15	-0.6307	2.04	-0.6380	9.41	-0.6152
2.04	-0.7202	3.17	-0.7254	23.64	-0.4598
3.17	-0.7556	4.55	-0.7178	53.16	-0.3585
4.55	-0.7572	6.76	-0.6072	100.00	-0.2177
6.76	-0.6336	9.41	-0.5850		
9.41	-0.6383	13.37	-0.5028		
13.37	-0.5127	18.08	-0.4598		
18.08	-0.5083	23.64	-0.4258		
23.64	-0.4205	31.47	-0.4030		
31.47	-0.3975	41.05	-0.3738		
41.05	-0.3736	53.16	-0.3393		
53.16	-0.3285	70.31	-0.2889		
70.31	-0.2984	84.88	-0.3042		
84.88	-0.2662	100.00	-0.2262		
100.00	-0.1955	108.98	-0.1841		
108.98	-0.1470				

M = 0.693

mfr = 0.743 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.0344	-16.79	0.0045	-6.39	0.4190
-6.39	0.3834	-3.01	0.7371	-3.01	0.7431
-3.01	0.7736	-1.63	0.9870	-1.63	0.9948
-1.63	0.9596	-0.70	1.1079	-0.70	1.1104
-0.70	1.1190	-0.18	1.1036	-0.18	1.1013
-0.18	1.0908	0.00	0.8344	0.00	0.8509
0.00	0.7993	0.13	0.4334	0.52	0.0031
0.13	0.2803	0.52	-0.0635	2.04	-0.4838
0.52	-0.0374	1.15	-0.3175	4.55	-0.6080
1.15	-0.3121	2.04	-0.4848	9.41	-0.4829
2.04	-0.4350	3.17	-0.5340	23.64	-0.3812
3.17	-0.5602	4.55	-0.5734	53.16	-0.3090
4.55	-0.5682	6.76	-0.5227	100.00	-0.1787
6.76	-0.5501	9.41	-0.5156		
9.41	-0.4818	13.37	-0.4743		
13.37	-0.4833	18.08	-0.4478		
18.08	-0.4296	23.64	-0.4129		
23.64	-0.4141	31.47	-0.3992		
31.47	-0.4015	41.05	-0.3719		
41.05	-0.3734	53.16	-0.3412		
53.16	-0.3411	70.31	-0.2991		
70.31	-0.3151	84.88	-0.2560		
84.88	-0.2840	100.00	-0.1766		
100.00	-0.2098	108.98	-0.1404		
108.98	-0.1645				

M = 0.695

mfr = 0.789 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2751	-16.79	-0.2964	-6.39	0.2242
-6.39	0.1774	-3.01	0.6105	-3.01	0.6143
-3.01	0.6696	-1.63	0.8492	-1.63	0.8879
-1.63	0.8705	-0.70	1.0730	-0.70	1.0782
-0.70	1.0858	-0.18	1.1209	-0.18	1.1204
-0.18	1.1134	0.00	0.9536	0.00	0.9555
0.00	0.9222	0.13	0.5936	0.52	0.1645
0.13	0.5477	0.52	0.1448	2.04	-0.2541
0.52	0.0730	1.15	-0.1371	4.55	-0.4567
1.15	-0.0977	2.04	-0.2884	9.41	-0.3890
2.04	-0.3051	3.17	-0.3913	23.64	-0.3805
3.17	-0.3677	4.55	-0.4266	53.16	-0.3176
4.55	-0.4303	6.76	-0.4148	100.00	-0.1935
6.76	-0.4203	9.41	-0.4087		
9.41	-0.4433	13.37	-0.3880		
13.37	-0.4035	18.08	-0.3941		
18.08	-0.3848	23.64	-0.3608		
23.64	-0.3706	31.47	-0.3630		
31.47	-0.3715	41.05	-0.3394		
41.05	-0.3410	53.16	-0.3142		
53.16	-0.3193	70.31	-0.2748		
70.31	-0.2893	84.88	-0.2639		
84.88	-0.2655	100.00	-0.1910		
100.00	-0.1958	108.98	-0.1451		
108.98	-0.1523				

Table 7. Continued

(c) M = 0.74

M = 0.742

mfr = 0.518 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7654	-16.79	0.7595	-6.39	0.9787
-6.39	0.9838	-3.01	1.1239	-3.01	1.1140
-3.01	1.1294	-1.63	1.1443	-1.63	1.1335
-1.63	1.1448	-0.70	1.0590	-0.70	1.0386
-0.70	1.0426	-0.18	0.7734	-0.18	0.7894
-0.18	0.7219	0.00	0.2251	0.00	0.2692
0.00	0.2049	0.13	-0.3779	0.52	-0.9967
0.13	-0.5081	0.52	-1.0580	2.04	-1.4067
0.52	-1.0783	1.15	-1.2404	4.55	-1.4736
1.15	-1.2479	2.04	-1.3794	9.41	-1.4045
2.04	-1.4237	3.17	-1.4632	23.64	-0.4700
3.17	-1.4805	4.55	-1.4610	53.16	-0.4253
4.55	-1.4786	6.76	-1.4354	100.00	-0.2400
6.76	-1.4632	9.41	-1.3694		
9.41	-1.3866	13.37	-1.2895		
13.37	-1.3281	18.08	-0.6442		
18.08	-0.9569	23.64	-0.4513		
23.64	-0.4706	31.47	-0.4909		
31.47	-0.4776	41.05	-0.4759		
41.05	-0.4683	53.16	-0.4297		
53.16	-0.4254	70.31	-0.3627		
70.31	-0.3733	84.88	-0.3446		
84.88	-0.3254	100.00	-0.2499		
100.00	-0.2379	108.98	-0.2031		
108.98	-0.1833				

M = 0.743

mfr = 0.560 and α = 0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6629	-16.79	0.6484	-6.39	0.9252
-6.39	0.9285	-3.01	1.0911	-3.01	1.0850
-3.01	1.0956	-1.63	1.1415	-1.63	1.1420
-1.63	1.1420	-0.70	1.1001	-0.70	1.0904
-0.70	1.0910	-0.18	0.8732	-0.18	0.8701
-0.18	0.8181	0.00	0.3469	0.00	0.4332
0.00	0.3349	0.13	-0.2008	0.52	-0.7835
0.13	-0.3243	0.52	-0.8199	2.04	-1.2593
0.52	-0.8894	1.15	-1.0982	4.55	-1.3368
1.15	-1.0918	2.04	-1.2312	9.41	-1.2862
2.04	-1.2847	3.17	-1.3061	23.64	-0.5108
3.17	-1.3082	4.55	-1.2953	53.16	-0.4152
4.55	-1.3044	6.76	-1.3476	100.00	-0.2362
6.76	-1.3040	9.41	-1.2100		
9.41	-1.2385	13.37	-1.1575		
13.37	-1.1017	18.08	-0.4987		
18.08	-0.5150	23.64	-0.5212		
23.64	-0.5119	31.47	-0.5049		
31.47	-0.5015	41.05	-0.4647		
41.05	-0.4695	53.16	-0.4160		
53.16	-0.4171	70.31	-0.3491		
70.31	-0.3670	84.88	-0.3329		
84.88	-0.3204	100.00	-0.2388		
100.00	-0.2360	108.98	-0.1845		
108.98	-0.1831				

M = 0.744

mfr = 0.612 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5293	-16.79	0.5001	-6.39	0.8129
-6.39	0.8152	-3.01	1.0402	-3.01	1.0341
-3.01	1.0427	-1.63	1.1271	-1.63	1.1389
-1.63	1.1340	-0.70	1.1305	-0.70	1.1321
-0.70	1.1229	-0.18	0.9622	-0.18	0.9712
-0.18	0.9276	0.00	0.5087	0.00	0.5874
0.00	0.4330	0.13	-0.0171	0.52	-0.5671
0.13	-0.1518	0.52	-0.5749	2.04	-1.0386
0.52	-0.5965	1.15	-0.8616	4.55	-1.1539
1.15	-0.8648	2.04	-1.0416	9.41	-1.0036
2.04	-1.1154	3.17	-1.1055	23.64	-0.5377
3.17	-1.0865	4.55	-1.1150	53.16	-0.4060
4.55	-1.1557	6.76	-1.1323	100.00	-0.2309
6.76	-1.0673	9.41	-1.0369		
9.41	-1.0158	13.37	-0.5844		
13.37	-0.5887	18.08	-0.5895		
18.08	-0.5819	23.64	-0.5429		
23.64	-0.5535	31.47	-0.4990		
31.47	-0.4962	41.05	-0.4539		
41.05	-0.4559	53.16	-0.4030		
53.16	-0.4097	70.31	-0.3400		
70.31	-0.3582	84.88	-0.3161		
84.88	-0.3159	100.00	-0.2327		
100.00	-0.2286	108.98	-0.1754		
108.98	-0.1793				

M = 0.742

mfr = 0.642 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4104	-16.79	0.4109	-6.39	0.7488
-6.39	0.7448	-3.01	0.9907	-3.01	0.9831
-3.01	0.9893	-1.63	1.1109	-1.63	1.1260
-1.63	1.1149	-0.70	1.1442	-0.70	1.1410
-0.70	1.1379	-0.18	1.0187	-0.18	1.0144
-0.18	0.9740	0.00	0.6047	0.00	0.6266
0.00	0.5395	0.13	0.1001	0.52	-0.3966
0.13	-0.0083	0.52	-0.4810	2.04	-0.9752
0.52	-0.5394	1.15	-0.7446	4.55	-0.9917
1.15	-0.7313	2.04	-0.9272	9.41	-0.8960
2.04	-0.9878	3.17	-0.9657	23.64	-0.5056
3.17	-0.9693	4.55	-1.0012	53.16	-0.3884
4.55	-1.0475	6.76	-0.8909	100.00	-0.2207
6.76	-0.9897	9.41	-0.8147		
9.41	-0.7937	13.37	-0.5948		
13.37	-0.6099	18.08	-0.5818		
18.08	-0.5710	23.64	-0.5212		
23.64	-0.5125	31.47	-0.4684		
31.47	-0.4705	41.05	-0.4359		
41.05	-0.4381	53.16	-0.3881		
53.16	-0.3946	70.31	-0.3271		
70.31	-0.3442	84.88	-0.3059		
84.88	-0.3099	100.00	-0.2191		
100.00	-0.2194	108.98	-0.1694		
108.98	-0.1707				

M = 0.743

mfr = 0.696 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.2205	-16.79	0.2112	-6.39	0.6119
-6.39	0.6051	-3.01	0.9031	-3.01	0.8691
-3.01	0.9124	-1.63	1.0634	-1.63	1.0671
-1.63	1.0566	-0.70	1.1448	-0.70	1.1349
-0.70	1.1469	-0.18	1.0767	-0.18	1.0772
-0.18	1.0516	0.00	0.7420	0.00	0.7773
0.00	0.6743	0.13	0.2975	0.52	-0.1742
0.13	0.2247	0.52	-0.2147	2.04	-0.6908
0.52	-0.2593	1.15	-0.4907	4.55	-0.7712
1.15	-0.4916	2.04	-0.6126	9.41	-0.6661
2.04	-0.7397	3.17	-0.7279	23.64	-0.4881
3.17	-0.7354	4.55	-0.7206	53.16	-0.3644
4.55	-0.7112	6.76	-0.6769	100.00	-0.2168
6.76	-0.6951	9.41	-0.6955		
9.41	-0.6670	13.37	-0.5512		
13.37	-0.5624	18.08	-0.5235		
18.08	-0.5512	23.64	-0.4730		
23.64	-0.4897	31.47	-0.4498		
31.47	-0.4439	41.05	-0.4165		
41.05	-0.4161	53.16	-0.3826		
53.16	-0.3688	70.31	-0.3317		
70.31	-0.3342	84.88	-0.3074		
84.88	-0.3023	100.00	-0.2234		
100.00	-0.2157	108.98	-0.1773		
108.98	-0.1599				

M = 0.742

mfr = 0.743 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.0093	-16.79	-0.0133	-6.39	0.4197
-6.39	0.4353	-3.01	0.7772	-3.01	0.7649
-3.01	0.7840	-1.63	0.9867	-1.63	1.0013
-1.63	1.0004	-0.70	1.1315	-0.70	1.1135
-0.70	1.1386	-0.18	1.1242	-0.18	1.1152
-0.18	1.1092	0.00	0.8444	0.00	0.8854
0.00	0.8082	0.13	0.4897	0.52	0.0233
0.13	0.3970	0.52	0.0069	2.04	-0.4267
0.52	-0.0668	1.15	-0.2517	4.55	-0.5884
1.15	-0.2827	2.04	-0.4466	9.41	-0.5227
2.04	-0.4974	3.17	-0.5633	23.64	-0.4241
3.17	-0.5486	4.55	-0.5534	53.16	-0.3501
4.55	-0.5694	6.76	-0.5417	100.00	-0.2086
6.76	-0.5228	9.41	-0.5413		
9.41	-0.4886	13.37	-0.4768		
13.37	-0.4777	18.08	-0.4574		
18.08	-0.4793	23.64	-0.4306		
23.64	-0.4354	31.47	-0.4333		
31.47	-0.4220	41.05	-0.3923		
41.05	-0.3862	53.16	-0.3593		
53.16	-0.3681	70.31	-0.3160		
70.31	-0.3211	84.88	-0.3011		
84.88	-0.2819	100.00	-0.2184		
100.00	-0.2080	108.98	-0.1755		
108.98	-0.1594				

Table 7. Continued

(c) Concluded

M = 0.744

mfr = 0.791 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.3023	-16.79	-0.3186	-6.39	0.2448
-6.39	0.2172	-3.01	0.6535	-3.01	0.6374
-3.01	0.6680	-1.63	0.8826	-1.63	0.9322
-1.63	0.9058	-0.70	1.0963	-0.70	1.0858
-0.70	1.1024	-0.18	1.1391	-0.18	1.1357
-0.18	1.1405	0.00	0.9529	0.00	0.9907
0.00	0.9169	0.13	0.6664	0.52	0.2872
0.13	0.5289	0.52	0.2159	2.04	-0.2323
0.52	0.1618	1.15	-0.0848	4.55	-0.4577
1.15	-0.1094	2.04	-0.2379	9.41	-0.4172
2.04	-0.2920	3.17	-0.3544	23.64	-0.3845
3.17	-0.2740	4.55	-0.4116	53.16	-0.3380
4.55	-0.4053	6.76	-0.4275	100.00	-0.1959
6.76	-0.3965	9.41	-0.4651		
9.41	-0.3712	13.37	-0.4206		
13.37	-0.4056	18.08	-0.3974		
18.08	-0.4218	23.64	-0.3789		
23.64	-0.3927	31.47	-0.3783		
31.47	-0.3747	41.05	-0.3545		
41.05	-0.3705	53.16	-0.3388		
53.16	-0.3333	70.31	-0.2975		
70.31	-0.3034	84.88	-0.2764		
84.88	-0.2816	100.00	-0.1963		
100.00	-0.2013	108.98	-0.1522		
108.98	-0.1544				

Table 7. Continued

(d) M = 0.77

M = 0.768

mfr = 0.288 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0891	-16.79	1.0926	-6.39	1.1590
-6.39	1.1586	-3.01	1.1092	-3.01	1.1195
-3.01	1.1079	-1.63	0.9935	-1.63	0.9513
-1.63	0.9906	-0.70	0.7377	-0.70	0.7307
-0.70	0.7054	-0.18	0.3182	-0.18	0.3215
-0.18	0.2702	0.00	-0.3007	0.00	-0.2708
0.00	-0.3443	0.13	-0.9834	0.52	-1.5157
0.13	-1.0541	0.52	-1.5548	2.04	-1.8187
0.52	-1.5741	1.15	-1.7232	4.55	-1.8291
1.15	-1.7153	2.04	-1.8146	9.41	-1.7502
2.04	-1.8244	3.17	-1.8619	23.64	-1.4941
3.17	-1.8684	4.55	-1.8461	53.16	-0.5405
4.55	-1.8462	6.76	-1.8216	100.00	-0.2138
6.76	-1.7952	9.41	-1.7489		
9.41	-1.7701	13.37	-1.6725		
13.37	-1.6932	18.08	-1.5960		
18.08	-1.5911	23.64	-1.4979		
23.64	-1.4476	31.47	-1.3833		
31.47	-1.3692	41.05	-1.1631		
41.05	-1.1528	53.16	-0.5567		
53.16	-0.5345	70.31	-0.2286		
70.31	-0.2537	84.88	-0.2589		
84.88	-0.2637	100.00	-0.2195		
100.00	-0.2171	108.98	-0.1813		
108.98	-0.1858				

M = 0.767

mfr = 0.383 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.9988	-16.79	0.9978	-6.39	1.1347
-6.39	1.1271	-3.01	1.1555	-3.01	1.1569
-3.01	1.1525	-1.63	1.0958	-1.63	1.0681
-1.63	1.0964	-0.70	0.9037	-0.70	0.8791
-0.70	0.8627	-0.18	0.5336	-0.18	0.5249
-0.18	0.4747	0.00	-0.0514	0.00	-0.0207
0.00	-0.0852	0.13	-0.7033	0.52	-1.3149
0.13	-0.8249	0.52	-1.3766	2.04	-1.6410
0.52	-1.3885	1.15	-1.5626	4.55	-1.6751
1.15	-1.5571	2.04	-1.6339	9.41	-1.5998
2.04	-1.6516	3.17	-1.6639	23.64	-1.3300
3.17	-1.6772	4.55	-1.6664	53.16	-0.3294
4.55	-1.6486	6.76	-1.6377	100.00	-0.2411
6.76	-1.6364	9.41	-1.6077		
9.41	-1.5846	13.37	-1.5023		
13.37	-1.5214	18.08	-1.4415		
18.08	-1.4230	23.64	-1.3383		
23.64	-1.3126	31.47	-1.2259		
31.47	-1.2355	41.05	-0.5982		
41.05	-0.5762	53.16	-0.3003		
53.16	-0.3132	70.31	-0.2951		
70.31	-0.3143	84.88	-0.3168		
84.88	-0.3069	100.00	-0.2452		
100.00	-0.2453	108.98	-0.1939		
108.98	-0.1883				

M = 0.766

mfr = 0.515 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7773	-16.79	0.7767	-6.39	0.9939
-6.39	0.9937	-3.01	1.1300	-3.01	1.1216
-3.01	1.1365	-1.63	1.1558	-1.63	1.1416
-1.63	1.1561	-0.70	1.0776	-0.70	1.0610
-0.70	1.0564	-0.18	0.8112	-0.18	0.8033
-0.18	0.7670	0.00	0.2718	0.00	0.3358
0.00	0.2335	0.13	-0.2926	0.52	-0.9399
0.13	-0.4298	0.52	-0.9373	2.04	-1.2956
0.52	-0.9803	1.15	-1.1664	4.55	-1.4007
1.15	-1.1703	2.04	-1.2760	9.41	-1.3311
2.04	-1.3190	3.17	-1.3811	23.64	-1.0353
3.17	-1.3636	4.55	-1.3882	53.16	-0.4194
4.55	-1.3818	6.76	-1.3552	100.00	-0.2468
6.76	-1.3784	9.41	-1.3281		
9.41	-1.3209	13.37	-1.2514		
13.37	-1.2727	18.08	-1.1584		
18.08	-1.1814	23.64	-0.8198		
23.64	-0.8514	31.47	-0.3987		
31.47	-0.4101	41.05	-0.4305		
41.05	-0.4290	53.16	-0.4239		
53.16	-0.4082	70.31	-0.3644		
70.31	-0.3737	84.88	-0.3391		
84.88	-0.3322	100.00	-0.2474		
100.00	-0.2379	108.98	-0.1916		
108.98	-0.1843				

M = 0.767

mfr = 0.518 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8036	-16.79	0.7768	-6.39	0.9819
-6.39	1.0285	-3.01	1.1333	-3.01	1.1026
-3.01	1.1494	-1.63	1.1545	-1.63	1.1452
-1.63	1.1516	-0.70	1.0674	-0.70	1.0817
-0.70	1.0211	-0.18	0.8017	-0.18	0.8615
-0.18	0.7269	0.00	0.2733	0.00	0.3908
0.00	0.1782	0.13	-0.3067	0.52	-0.7833
0.13	-0.5220	0.52	-0.9469	2.04	-1.2031
0.52	-1.1141	1.15	-1.1544	4.55	-1.2910
1.15	-1.3054	2.04	-1.2905	9.41	-1.2106
2.04	-1.4455	3.17	-1.3634	23.64	-0.7862
3.17	-1.4473	4.55	-1.3651	53.16	-0.4101
4.55	-1.4614	6.76	-1.3488	100.00	-0.2334
6.76	-1.4677	9.41	-1.2964		
9.41	-1.3936	13.37	-1.2452		
13.37	-1.3730	18.08	-1.1640		
18.08	-1.2790	23.64	-0.9923		
23.64	-1.1963	31.47	-0.4137		
31.47	-0.5665	41.05	-0.4376		
41.05	-0.3771	53.16	-0.4307		
53.16	-0.3705	70.31	-0.3733		
70.31	-0.3716	84.88	-0.3399		
84.88	-0.3311	100.00	-0.2526		
100.00	-0.2429	108.98	-0.1991		
108.98	-0.1882				

M = 0.767

mfr = 0.518 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8260	-16.79	0.7723	-6.39	0.9601
-6.39	1.0475	-3.01	1.1354	-3.01	1.0933
-3.01	1.1522	-1.63	1.1549	-1.63	1.1538
-1.63	1.1467	-0.70	1.0752	-0.70	1.1081
-0.70	0.9864	-0.18	0.8001	-0.18	0.8889
-0.18	0.6731	0.00	0.2814	0.00	0.4890
0.00	0.1191	0.13	-0.3109	0.52	-0.6440
0.13	-0.5943	0.52	-0.9616	2.04	-1.1141
0.52	-1.2127	1.15	-1.1441	4.55	-1.1566
1.15	-1.4098	2.04	-1.2989	9.41	-1.0904
2.04	-1.4944	3.17	-1.3672	23.64	-0.4657
3.17	-1.5266	4.55	-1.3701	53.16	-0.3983
4.55	-1.5440	6.76	-1.3593	100.00	-0.2318
6.76	-1.5533	9.41	-1.3156		
9.41	-1.4859	13.37	-1.2282		
13.37	-1.4609	18.08	-1.1536		
18.08	-1.3783	23.64	-0.7314		
23.64	-1.2472	31.47	-0.4219		
31.47	-1.1345	41.05	-0.4328		
41.05	-0.4345	53.16	-0.4245		
53.16	-0.3182	70.31	-0.3655		
70.31	-0.3522	84.88	-0.3420		
84.88	-0.3174	100.00	-0.2491		
100.00	-0.2392	108.98	-0.1935		
108.98	-0.1838				

M = 0.767

mfr = 0.518 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8511	-16.79	0.7791	-6.39	0.9240
-6.39	1.0559	-3.01	1.1339	-3.01	1.0824
-3.01	1.1561	-1.63	1.1559	-1.63	1.1542
-1.63	1.1369	-0.70	1.0755	-0.70	1.1268
-0.70	0.9709	-0.18	0.7960	-0.18	0.9577
-0.18	0.6224	0.00	0.2860	0.00	0.5265
0.00	0.0401	0.13	-0.2671	0.52	-0.5080
0.13	-0.6839	0.52	-0.9174	2.04	-0.9548
0.52	-1.2659	1.15	-1.1671	4.55	-1.0309
1.15	-1.4448	2.04	-1.3031	9.41	-0.8521
2.04	-1.5736	3.17	-1.3517	23.64	-0.5072
3.17	-1.6122	4.55	-1.3642	53.16	-0.3911
4.55	-1.5967	6.76	-1.3368	100.00	-0.2267
6.76	-1.6089	9.41	-1.2997		
9.41	-1.5618	13.37	-1.2328		
13.37	-1.5274	18.08	-1.1563		
18.08	-1.4607	23.64	-1.0014		
23.64	-1.3859	31.47	-0.4708		
31.47	-1.1852	41.05	-0.4686		
41.05	-0.6457	53.16	-0.4326		
53.16	-0.3736	70.31	-0.3675		
70.31	-0.2839	84.88	-0.3393		
84.88	-0.2976	100.00	-0.2495		
100.00	-0.2232	108.98	-0.1905		
108.98	-0.1811				

Table 7. Continued

(d) Continued

M = 0.766

mfr = 0.559 and α = 0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6790	-16.79	0.6644	-6.39	0.9273
-6.39	0.9425	-3.01	1.1008	-3.01	1.0945
-3.01	1.1020	-1.63	1.1518	-1.63	1.1515
-1.63	1.1525	-0.70	1.1120	-0.70	1.1032
-0.70	1.0909	-0.18	0.8950	-0.18	0.8883
-0.18	0.8370	0.00	0.4088	0.00	0.4387
0.00	0.3584	0.13	-0.1487	0.52	-0.7012
0.13	-0.3245	0.52	-0.7824	2.04	-1.1762
0.52	-0.8385	1.15	-1.0001	4.55	-1.2316
1.15	-1.0471	2.04	-1.1879	9.41	-1.2353
2.04	-1.1878	3.17	-1.2337	23.64	-0.4461
3.17	-1.2708	4.55	-1.2462	53.16	-0.4215
4.55	-1.2597	6.76	-1.2720	100.00	-0.2383
6.76	-1.2953	9.41	-1.2058		
9.41	-1.2119	13.37	-1.1238		
13.37	-1.1854	18.08	-1.0371		
18.08	-1.0371	23.64	-0.4473		
23.64	-0.4672	31.47	-0.4627		
31.47	-0.4169	41.05	-0.4640		
41.05	-0.4661	53.16	-0.4237		
53.16	-0.4184	70.31	-0.3568		
70.31	-0.3761	84.88	-0.3303		
84.88	-0.3331	100.00	-0.2322		
100.00	-0.2382	108.98	-0.1822		
108.98	-0.1811				

M = 0.768

mfr = 0.617 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5212	-16.79	0.5263	-6.39	0.8327
-6.39	0.8439	-3.01	1.0433	-3.01	1.0434
-3.01	1.0477	-1.63	1.1408	-1.63	1.1488
-1.63	1.1405	-0.70	1.1432	-0.70	1.1427
-0.70	1.1390	-0.18	0.9746	-0.18	0.9771
-0.18	0.9493	0.00	0.5486	0.00	0.5886
0.00	0.5135	0.13	0.0610	0.52	-0.3988
0.13	-0.0639	0.52	-0.5082	2.04	-1.0166
0.52	-0.5893	1.15	-0.8089	4.55	-1.0735
1.15	-0.8112	2.04	-0.9785	9.41	-1.0689
2.04	-0.9958	3.17	-1.0195	23.64	-0.5074
3.17	-1.0338	4.55	-1.0859	53.16	-0.4129
4.55	-1.1039	6.76	-1.0830	100.00	-0.2279
6.76	-1.0873	9.41	-1.0021		
9.41	-1.0574	13.37	-0.9548		
13.37	-0.9793	18.08	-0.5095		
18.08	-0.7791	23.64	-0.5086		
23.64	-0.5004	31.47	-0.4925		
31.47	-0.4989	41.05	-0.4644		
41.05	-0.4643	53.16	-0.4155		
53.16	-0.4133	70.31	-0.3498		
70.31	-0.3624	84.88	-0.3251		
84.88	-0.3214	100.00	-0.2343		
100.00	-0.2358	108.98	-0.1767		
108.98	-0.1762				

M = 0.768

mfr = 0.612 and α = 1.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5742	-16.79	0.5148	-6.39	0.7790
-6.39	0.8677	-3.01	1.0431	-3.01	1.0169
-3.01	1.0754	-1.63	1.1378	-1.63	1.1340
-1.63	1.1518	-0.70	1.1452	-0.70	1.1519
-0.70	1.1276	-0.18	0.9744	-0.18	1.0146
-0.18	0.8858	0.00	0.5442	0.00	0.6774
0.00	0.4327	0.13	0.0304	0.52	-0.3070
0.13	-0.2348	0.52	-0.5212	2.04	-0.8362
0.52	-0.7305	1.15	-0.8134	4.55	-0.9260
1.15	-0.9485	2.04	-0.9890	9.41	-0.8454
2.04	-1.1033	3.17	-1.0019	23.64	-0.4971
3.17	-1.1942	4.55	-1.0421	53.16	-0.3949
4.55	-1.2363	6.76	-1.1036	100.00	-0.2173
6.76	-1.1928	9.41	-1.0118		
9.41	-1.1861	13.37	-0.9313		
13.37	-1.0920	18.08	-0.5589		
18.08	-0.9881	23.64	-0.5228		
23.64	-0.4830	31.47	-0.4898		
31.47	-0.4224	41.05	-0.4569		
41.05	-0.4656	53.16	-0.4149		
53.16	-0.4236	70.31	-0.3482		
70.31	-0.3707	84.88	-0.3197		
84.88	-0.3274	100.00	-0.2353		
100.00	-0.2362	108.98	-0.1794		
108.98	-0.1758				

M = 0.767

mfr = 0.613 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6056	-16.79	0.5254	-6.39	0.7419
-6.39	0.8957	-3.01	1.0450	-3.01	0.9671
-3.01	1.1051	-1.63	1.1344	-1.63	1.1205
-1.63	1.1540	-0.70	1.1402	-0.70	1.1545
-0.70	1.1011	-0.18	0.9641	-0.18	1.0512
-0.18	0.8500	0.00	0.5535	0.00	0.7657
0.00	0.3804	0.13	0.0448	0.52	-0.1718
0.13	-0.3054	0.52	-0.5496	2.04	-0.6810
0.52	-0.8656	1.15	-0.8178	4.55	-0.7189
1.15	-1.0410	2.04	-0.9824	9.41	-0.6740
2.04	-1.2120	3.17	-1.0560	23.64	-0.4648
3.17	-1.2816	4.55	-1.0481	53.16	-0.3662
4.55	-1.3307	6.76	-1.0415	100.00	-0.2194
6.76	-1.3355	9.41	-1.0236		
9.41	-1.3093	13.37	-0.9164		
13.37	-1.2489	18.08	-0.5646		
18.08	-1.1654	23.64	-0.5380		
23.64	-0.8745	31.47	-0.5011		
31.47	-0.4115	41.05	-0.4594		
41.05	-0.3986	53.16	-0.4096		
53.16	-0.4160	70.31	-0.3554		
70.31	-0.3749	84.88	-0.3242		
84.88	-0.3265	100.00	-0.2318		
100.00	-0.2392	108.98	-0.1793		
108.98	-0.1794				

M = 0.770

mfr = 0.618 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6307	-16.79	0.5305	-6.39	0.6784
-6.39	0.9373	-3.01	1.0405	-3.01	0.9302
-3.01	1.1141	-1.63	1.1366	-1.63	1.1003
-1.63	1.1577	-0.70	1.1428	-0.70	1.1543
-0.70	1.0841	-0.18	0.9869	-0.18	1.0987
-0.18	0.8262	0.00	0.5465	0.00	0.8063
0.00	0.2842	0.13	0.0510	0.52	-0.0026
0.13	-0.3682	0.52	-0.5575	2.04	-0.4160
0.52	-0.9622	1.15	-0.7913	4.55	-0.5637
1.15	-1.1448	2.04	-0.9228	9.41	-0.5410
2.04	-1.2859	3.17	-1.0048	23.64	-0.4078
3.17	-1.3783	4.55	-1.0436	53.16	-0.3506
4.55	-1.3934	6.76	-1.0300	100.00	-0.2095
6.76	-1.4052	9.41	-1.0432		
9.41	-1.3581	13.37	-0.9175		
13.37	-1.3325	18.08	-0.6146		
18.08	-1.2811	23.64	-0.5455		
23.64	-1.2011	31.47	-0.5009		
31.47	-0.7681	41.05	-0.4669		
41.05	-0.3741	53.16	-0.4116		
53.16	-0.3686	70.31	-0.3551		
70.31	-0.3623	84.88	-0.3258		
84.88	-0.3218	100.00	-0.2416		
100.00	-0.2356	108.98	-0.1876		
108.98	-0.1809				

M = 0.768

mfr = 0.646 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4328	-16.79	0.4301	-6.39	0.7464
-6.39	0.7669	-3.01	1.0032	-3.01	1.0180
-3.01	1.0050	-1.63	1.1185	-1.63	1.1349
-1.63	1.1320	-0.70	1.1553	-0.70	1.1497
-0.70	1.1525	-0.18	1.0182	-0.18	1.0141
-0.18	1.0032	0.00	0.6065	0.00	0.6680
0.00	0.6037	0.13	0.1340	0.52	-0.3934
0.13	0.0333	0.52	-0.4568	2.04	-0.8820
0.52	-0.4945	1.15	-0.6562	4.55	-0.9549
1.15	-0.6536	2.04	-0.8878	9.41	-0.9408
2.04	-0.9216	3.17	-0.9276	23.64	-0.5140
3.17	-0.9463	4.55	-0.9429	53.16	-0.4087
4.55	-0.9128	6.76	-0.9632	100.00	-0.2248
6.76	-0.9574	9.41	-0.9077		
9.41	-0.9596	13.37	-0.7005		
13.37	-0.7838	18.08	-0.5165		
18.08	-0.5651	23.64	-0.5289		
23.64	-0.5101	31.47	-0.4869		
31.47	-0.4857	41.05	-0.4515		
41.05	-0.4425	53.16	-0.4013		
53.16	-0.4075	70.31	-0.3464		
70.31	-0.3570	84.88	-0.3132		
84.88	-0.3142	100.00	-0.2267		
100.00	-0.2320	108.98	-0.1735		
108.98	-0.1714				

Table 7. Continued

(d) Continued

M = 0.768

mfr = 0.694 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.2387	-16.79	0.2474	-6.39	0.6177
-6.39	0.6163	-3.01	0.9100	-3.01	0.8945
-3.01	0.9361	-1.63	1.0638	-1.63	1.0797
-1.63	1.0778	-0.70	1.1549	-0.70	1.1433
-0.70	1.1565	-0.18	1.0783	-0.18	1.0857
-0.18	1.0573	0.00	0.7558	0.00	0.7863
0.00	0.7134	0.13	0.3444	0.52	-0.1206
0.13	0.1889	0.52	-0.2129	2.04	-0.6875
0.52	-0.1963	1.15	-0.4550	4.55	-0.7682
1.15	-0.5221	2.04	-0.6478	9.41	-0.7189
2.04	-0.5847	3.17	-0.7073	23.64	-0.4968
3.17	-0.6594	4.55	-0.7591	53.16	-0.3822
4.55	-0.7666	6.76	-0.7480	100.00	-0.2138
6.76	-0.7294	9.41	-0.7106		
9.41	-0.7206	13.37	-0.6002		
13.37	-0.5485	18.08	-0.5390		
18.08	-0.5600	23.64	-0.4935		
23.64	-0.4974	31.47	-0.4631		
31.47	-0.4687	41.05	-0.4407		
41.05	-0.4349	53.16	-0.3919		
53.16	-0.3866	70.31	-0.3414		
70.31	-0.3424	84.88	-0.3194		
84.88	-0.3056	100.00	-0.2314		
100.00	-0.2202	108.98	-0.1743		
108.98	-0.1667				

M = 0.767

mfr = 0.694 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.2878	-16.79	0.2428	-6.39	0.5504
-6.39	0.6724	-3.01	0.9166	-3.01	0.8551
-3.01	0.9550	-1.63	1.0748	-1.63	1.0520
-1.63	1.1094	-0.70	1.1525	-0.70	1.1386
-0.70	1.1538	-0.18	1.0819	-0.18	1.1062
-0.18	1.0258	0.00	0.7448	0.00	0.8550
0.00	0.6353	0.13	0.3143	0.52	0.0148
0.13	0.0811	0.52	-0.1818	2.04	-0.5013
0.52	-0.3828	1.15	-0.4980	4.55	-0.6398
1.15	-0.5699	2.04	-0.6306	9.41	-0.6572
2.04	-0.8333	3.17	-0.7294	23.64	-0.4317
3.17	-0.9418	4.55	-0.7783	53.16	-0.3690
4.55	-0.8934	6.76	-0.7247	100.00	-0.2070
6.76	-0.9244	9.41	-0.7501		
9.41	-0.9248	13.37	-0.5602		
13.37	-0.7907	18.08	-0.5436		
18.08	-0.5588	23.64	-0.4984		
23.64	-0.5356	31.47	-0.4762		
31.47	-0.4832	41.05	-0.4369		
41.05	-0.4562	53.16	-0.3932		
53.16	-0.4112	70.31	-0.3487		
70.31	-0.3525	84.88	-0.3219		
84.88	-0.3127	100.00	-0.2332		
100.00	-0.2260	108.98	-0.1761		
108.98	-0.1742				

M = 0.766

mfr = 0.694 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3349	-16.79	0.2339	-6.39	0.4848
-6.39	0.7288	-3.01	0.9099	-3.01	0.7947
-3.01	1.0001	-1.63	1.0622	-1.63	1.0099
-1.63	1.1276	-0.70	1.1536	-0.70	1.1181
-0.70	1.1485	-0.18	1.0808	-0.18	1.1371
-0.18	0.9865	0.00	0.7556	0.00	0.9169
0.00	0.5491	0.13	0.3411	0.52	0.2273
0.13	-0.0359	0.52	-0.2012	2.04	-0.3398
0.52	-0.5503	1.15	-0.4756	4.55	-0.4611
1.15	-0.7444	2.04	-0.5856	9.41	-0.4536
2.04	-1.0071	3.17	-0.6981	23.64	-0.3767
3.17	-0.9905	4.55	-0.7521	53.16	-0.3443
4.55	-1.1024	6.76	-0.7347	100.00	-0.2074
6.76	-1.0780	9.41	-0.7105		
9.41	-1.1050	13.37	-0.5702		
13.37	-1.0086	18.08	-0.5549		
18.08	-0.8334	23.64	-0.5047		
23.64	-0.5086	31.47	-0.4640		
31.47	-0.5049	41.05	-0.4410		
41.05	-0.4724	53.16	-0.3990		
53.16	-0.4148	70.31	-0.3440		
70.31	-0.3675	84.88	-0.3250		
84.88	-0.3190	100.00	-0.2332		
100.00	-0.2274	108.98	-0.1829		
108.98	-0.1763				

M = 0.769

mfr = 0.695 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3908	-16.79	0.2324	-6.39	0.4084
-6.39	0.7630	-3.01	0.9184	-3.01	0.7357
-3.01	1.0332	-1.63	1.0660	-1.63	0.9799
-1.63	1.1418	-0.70	1.1550	-0.70	1.1092
-0.70	1.1386	-0.18	1.0816	-0.18	1.1509
-0.18	0.9589	0.00	0.7586	0.00	0.9956
0.00	0.4881	0.13	0.3388	0.52	0.3049
0.13	-0.1198	0.52	-0.1837	2.04	-0.1659
0.52	-0.6388	1.15	-0.4362	4.55	-0.3237
1.15	-0.8799	2.04	-0.6305	9.41	-0.3158
2.04	-1.0374	3.17	-0.7173	23.64	-0.3171
3.17	-1.1177	4.55	-0.7650	53.16	-0.3179
4.55	-1.1901	6.76	-0.7249	100.00	-0.2010
6.76	-1.2420	9.41	-0.7033		
9.41	-1.1945	13.37	-0.5830		
13.37	-1.1838	18.08	-0.5553		
18.08	-1.0868	23.64	-0.5040		
23.64	-0.7945	31.47	-0.4806		
31.47	-0.4155	41.05	-0.4461		
41.05	-0.4479	53.16	-0.4008		
53.16	-0.4232	70.31	-0.3495		
70.31	-0.3684	84.88	-0.3236		
84.88	-0.3201	100.00	-0.2322		
100.00	-0.2315	108.98	-0.1830		
108.98	-0.1736				

M = 0.768

mfr = 0.744 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.0021	-16.79	-0.0007	-6.39	0.4338
-6.39	0.4379	-3.01	0.7854	-3.01	0.7779
-3.01	0.7944	-1.63	0.9921	-1.63	1.0314
-1.63	1.0169	-0.70	1.1426	-0.70	1.1384
-0.70	1.1495	-0.18	1.1302	-0.18	1.1311
-0.18	1.1242	0.00	0.8728	0.00	0.9033
0.00	0.8751	0.13	0.5280	0.52	0.1152
0.13	0.3782	0.52	0.0331	2.04	-0.4325
0.52	-0.0742	1.15	-0.2801	4.55	-0.5996
1.15	-0.1966	2.04	-0.3777	9.41	-0.6361
2.04	-0.4731	3.17	-0.5189	23.64	-0.4349
3.17	-0.5203	4.55	-0.5624	53.16	-0.3604
4.55	-0.5998	6.76	-0.5334	100.00	-0.2081
6.76	-0.5785	9.41	-0.6005		
9.41	-0.4834	13.37	-0.4743		
13.37	-0.5160	18.08	-0.4858		
18.08	-0.4706	23.64	-0.4589		
23.64	-0.4547	31.47	-0.4307		
31.47	-0.4197	41.05	-0.4083		
41.05	-0.4094	53.16	-0.3746		
53.16	-0.3630	70.31	-0.3289		
70.31	-0.3338	84.88	-0.3000		
84.88	-0.3011	100.00	-0.2114		
100.00	-0.2167	108.98	-0.1621		
108.98	-0.1578				

M = 0.767

mfr = 0.791 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.3193	-16.79	-0.3193	-6.39	0.2730
-6.39	0.2826	-3.01	0.6474	-3.01	0.6508
-3.01	0.6535	-1.63	0.8867	-1.63	0.9453
-1.63	0.8980	-0.70	1.1114	-0.70	1.0966
-0.70	1.1173	-0.18	1.1534	-0.18	1.1522
-0.18	1.1491	0.00	0.9720	0.00	0.9940
0.00	0.9365	0.13	0.6502	0.52	0.2645
0.13	0.5696	0.52	0.2311	2.04	-0.2378
0.52	0.1830	1.15	-0.0400	4.55	-0.3768
1.15	-0.0348	2.04	-0.2180	9.41	-0.4702
2.04	-0.2512	3.17	-0.3094	23.64	-0.4090
3.17	-0.3024	4.55	-0.4036	53.16	-0.3482
4.55	-0.4161	6.76	-0.4098	100.00	-0.2003
6.76	-0.4128	9.41	-0.4330		
9.41	-0.4500	13.37	-0.4007		
13.37	-0.4235	18.08	-0.4177		
18.08	-0.4319	23.64	-0.4007		
23.64	-0.4058	31.47	-0.3808		
31.47	-0.3981	41.05	-0.3713		
41.05	-0.3734	53.16	-0.3442		
53.16	-0.3432	70.31	-0.2976		
70.31	-0.3189	84.88	-0.2864		
84.88	-0.2877	100.00	-0.2031		
100.00	-0.2017	108.98	-0.1495		
108.98	-0.1552				

Table 7. Continued

(d) Concluded

M = 0.768

mfr = 0.791 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2409	-16.79	-0.3230	-6.39	0.1786
-6.39	0.3403	-3.01	0.6514	-3.01	0.5941
-3.01	0.7324	-1.63	0.9049	-1.63	0.8797
-1.63	0.9639	-0.70	1.1026	-0.70	1.0766
-0.70	1.1387	-0.18	1.1528	-0.18	1.1578
-0.18	1.1332	0.00	0.9827	0.00	1.0359
0.00	0.8816	0.13	0.6641	0.52	0.4088
0.13	0.4153	0.52	0.2199	2.04	-0.0971
0.52	0.0832	1.15	-0.0633	4.55	-0.2838
1.15	-0.1055	2.04	-0.2214	9.41	-0.3338
2.04	-0.4074	3.17	-0.3371	23.64	-0.3362
3.17	-0.5454	4.55	-0.4081	53.16	-0.3247
4.55	-0.5535	6.76	-0.4217	100.00	-0.1967
6.76	-0.5263	9.41	-0.4465		
9.41	-0.5255	13.37	-0.4209		
13.37	-0.5002	18.08	-0.4065		
18.08	-0.4986	23.64	-0.3784		
23.64	-0.4674	31.47	-0.3903		
31.47	-0.4291	41.05	-0.3791		
41.05	-0.4037	53.16	-0.3498		
53.16	-0.3699	70.31	-0.3071		
70.31	-0.3346	84.88	-0.2860		
84.88	-0.2993	100.00	-0.2054		
100.00	-0.2137	108.98	-0.1532		
108.98	-0.1581				

M = 0.768

mfr = 0.791 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.1740	-16.79	-0.3421	-6.39	0.1148
-6.39	0.4077	-3.01	0.6497	-3.01	0.4888
-3.01	0.8123	-1.63	0.8814	-1.63	0.8300
-1.63	0.9959	-0.70	1.1008	-0.70	1.0419
-0.70	1.1527	-0.18	1.1489	-0.18	1.1539
-0.18	1.1162	0.00	0.9868	0.00	1.0823
0.00	0.8269	0.13	0.6917	0.52	0.5341
0.13	0.4004	0.52	0.2180	2.04	0.0353
0.52	-0.1199	1.15	-0.0141	4.55	-0.1606
1.15	-0.4141	2.04	-0.2248	9.41	-0.2001
2.04	-0.5531	3.17	-0.3557	23.64	-0.2958
3.17	-0.6968	4.55	-0.4048	53.16	-0.2888
4.55	-0.7034	6.76	-0.4354	100.00	-0.1816
6.76	-0.7236	9.41	-0.4358		
9.41	-0.7332	13.37	-0.4226		
13.37	-0.5776	18.08	-0.4160		
18.08	-0.5884	23.64	-0.3838		
23.64	-0.5096	31.47	-0.4016		
31.47	-0.4751	41.05	-0.3757		
41.05	-0.4299	53.16	-0.3576		
53.16	-0.3994	70.31	-0.3016		
70.31	-0.3398	84.88	-0.2921		
84.88	-0.3038	100.00	-0.2124		
100.00	-0.2131	108.98	-0.1554		
108.98	-0.1597				

M = 0.768

mfr = 0.790 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.1160	-16.79	-0.3434	-6.39	0.0231
-6.39	0.4530	-3.01	0.6496	-3.01	0.4328
-3.01	0.8298	-1.63	0.8967	-1.63	0.7531
-1.63	1.0315	-0.70	1.0915	-0.70	1.0115
-0.70	1.1544	-0.18	1.1463	-0.18	1.1455
-0.18	1.0871	0.00	0.9716	0.00	1.1179
0.00	0.7811	0.13	0.7035	0.52	0.6298
0.13	0.1961	0.52	0.2129	2.04	0.1372
0.52	-0.1950	1.15	-0.0321	4.55	-0.0622
1.15	-0.4652	2.04	-0.2178	9.41	-0.1589
2.04	-0.6540	3.17	-0.3120	23.64	-0.2476
3.17	-0.7790	4.55	-0.4306	53.16	-0.2744
4.55	-0.8305	6.76	-0.4203	100.00	-0.1771
6.76	-0.8625	9.41	-0.4373		
9.41	-0.8739	13.37	-0.4286		
13.37	-0.7779	18.08	-0.4228		
18.08	-0.5812	23.64	-0.3848		
23.64	-0.5455	31.47	-0.3879		
31.47	-0.5005	41.05	-0.3905		
41.05	-0.4637	53.16	-0.3568		
53.16	-0.4097	70.31	-0.3107		
70.31	-0.3549	84.88	-0.2896		
84.88	-0.3140	100.00	-0.2098		
100.00	-0.2221	108.98	-0.1549		
108.98	-0.1650				

Table 7. Continued

(e) M = 0.79

M = 0.793

mfr = 0.286 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.1055	-16.79	1.1059	-6.39	1.1706
-6.39	1.1678	-3.01	1.1255	-3.01	1.1263
-3.01	1.1225	-1.63	1.0131	-1.63	0.9722
-1.63	1.0097	-0.70	0.7655	-0.70	0.7558
-0.70	0.7362	-0.18	0.3453	-0.18	0.3525
-0.18	0.3135	0.00	-0.2387	0.00	-0.2075
0.00	-0.2904	0.13	-0.8972	0.52	-1.3887
0.13	-0.9864	0.52	-1.4479	2.04	-1.7105
0.52	-1.4829	1.15	-1.6042	4.55	-1.7297
1.15	-1.5978	2.04	-1.6973	9.41	-1.6573
2.04	-1.7055	3.17	-1.7452	23.64	-1.4447
3.17	-1.7243	4.55	-1.7336	53.16	-1.1470
4.55	-1.7311	6.76	-1.6941	100.00	-0.1480
6.76	-1.6806	9.41	-1.6494		
9.41	-1.6433	13.37	-1.5706		
13.37	-1.5846	18.08	-1.5075		
18.08	-1.5060	23.64	-1.4019		
23.64	-1.3620	31.47	-1.3271		
31.47	-1.3068	41.05	-1.2096		
41.05	-1.2090	53.16	-1.0854		
53.16	-1.0892	70.31	-0.3797		
70.31	-0.4056	84.88	-0.2309		
84.88	-0.2047	100.00	-0.1533		
100.00	-0.1641	108.98	-0.1258		
108.98	-0.1269				

M = 0.791

mfr = 0.384 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0083	-16.79	1.0076	-6.39	1.1402
-6.39	1.1402	-3.01	1.1662	-3.01	1.1679
-3.01	1.1650	-1.63	1.1079	-1.63	1.0836
-1.63	1.1008	-0.70	0.9226	-0.70	0.9173
-0.70	0.9055	-0.18	0.5688	-0.18	0.5581
-0.18	0.5184	0.00	-0.0148	0.00	0.0331
0.00	-0.0515	0.13	-0.6313	0.52	-1.2119
0.13	-0.7349	0.52	-1.2516	2.04	-1.5281
0.52	-1.2812	1.15	-1.4480	4.55	-1.5553
1.15	-1.4413	2.04	-1.5309	9.41	-1.5077
2.04	-1.5230	3.17	-1.5649	23.64	-1.2676
3.17	-1.5704	4.55	-1.5621	53.16	-0.5652
4.55	-1.5737	6.76	-1.5421	100.00	-0.2046
6.76	-1.5166	9.41	-1.4936		
9.41	-1.5106	13.37	-1.4207		
13.37	-1.4155	18.08	-1.3622		
18.08	-1.3565	23.64	-1.2792		
23.64	-1.2488	31.47	-1.1886		
31.47	-1.2074	41.05	-1.0988		
41.05	-1.0808	53.16	-0.4818		
53.16	-0.5138	70.31	-0.2349		
70.31	-0.2524	84.88	-0.2516		
84.88	-0.2524	100.00	-0.2111		
100.00	-0.2107	108.98	-0.1689		
108.98	-0.1683				

M = 0.792

mfr = 0.519 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7889	-16.79	0.7899	-6.39	1.0047
-6.39	1.0187	-3.01	1.1403	-3.01	1.1465
-3.01	1.1433	-1.63	1.1670	-1.63	1.1624
-1.63	1.1641	-0.70	1.0853	-0.70	1.0846
-0.70	1.0771	-0.18	0.8226	-0.18	0.8278
-0.18	0.7878	0.00	0.3359	0.00	0.3818
0.00	0.2924	0.13	-0.2318	0.52	-0.8322
0.13	-0.3786	0.52	-0.8506	2.04	-1.2093
0.52	-0.9087	1.15	-1.0618	4.55	-1.2941
1.15	-1.0645	2.04	-1.2117	9.41	-1.2773
2.04	-1.1920	3.17	-1.2741	23.64	-1.0190
3.17	-1.2934	4.55	-1.3017	53.16	-0.3191
4.55	-1.2991	6.76	-1.2617	100.00	-0.2402
6.76	-1.2668	9.41	-1.2413		
9.41	-1.2379	13.37	-1.1841		
13.37	-1.1758	18.08	-1.1474		
18.08	-1.1339	23.64	-1.0470		
23.64	-1.0581	31.47	-0.9804		
31.47	-0.9859	41.05	-0.3722		
41.05	-0.4028	53.16	-0.3659		
53.16	-0.3277	70.31	-0.3442		
70.31	-0.3619	84.88	-0.3330		
84.88	-0.3245	100.00	-0.2420		
100.00	-0.2376	108.98	-0.1807		
108.98	-0.1803				

M = 0.793

mfr = 0.563 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6931	-16.79	0.6905	-6.39	0.9499
-6.39	0.9398	-3.01	1.1040	-3.01	1.1033
-3.01	1.1194	-1.63	1.1616	-1.63	1.1654
-1.63	1.1667	-0.70	1.1231	-0.70	1.1121
-0.70	1.1092	-0.18	0.9176	-0.18	0.9224
-0.18	0.8805	0.00	0.4453	0.00	0.5001
0.00	0.4358	0.13	-0.1148	0.52	-0.6314
0.13	-0.2575	0.52	-0.6916	2.04	-1.0716
0.52	-0.7667	1.15	-0.9073	4.55	-1.1800
1.15	-0.8813	2.04	-1.0449	9.41	-1.1322
2.04	-1.0939	3.17	-1.1425	23.64	-0.9830
3.17	-1.1542	4.55	-1.1445	53.16	-0.4050
4.55	-1.1915	6.76	-1.1665	100.00	-0.2323
6.76	-1.2028	9.41	-1.1346		
9.41	-1.1322	13.37	-1.1003		
13.37	-1.1226	18.08	-1.0333		
18.08	-1.0350	23.64	-0.9587		
23.64	-0.9761	31.47	-0.5007		
31.47	-0.6000	41.05	-0.3914		
41.05	-0.3516	53.16	-0.4026		
53.16	-0.3867	70.31	-0.3606		
70.31	-0.3686	84.88	-0.3348		
84.88	-0.3331	100.00	-0.2392		
100.00	-0.2365	108.98	-0.1806		
108.98	-0.1812				

M = 0.794

mfr = 0.617 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5307	-16.79	0.5422	-6.39	0.8439
-6.39	0.8347	-3.01	1.0503	-3.01	1.0529
-3.01	1.0583	-1.63	1.1483	-1.63	1.1559
-1.63	1.1514	-0.70	1.1555	-0.70	1.1517
-0.70	1.1507	-0.18	1.0117	-0.18	0.9951
-0.18	0.9554	0.00	0.5815	0.00	0.6267
0.00	0.5674	0.13	0.0818	0.52	-0.3476
0.13	-0.0108	0.52	-0.4472	2.04	-0.9442
0.52	-0.5308	1.15	-0.7292	4.55	-1.0057
1.15	-0.7159	2.04	-0.9184	9.41	-1.0029
2.04	-0.9191	3.17	-0.9419	23.64	-0.7694
3.17	-0.9765	4.55	-0.9917	53.16	-0.4185
4.55	-1.0130	6.76	-1.0264	100.00	-0.2296
6.76	-1.0424	9.41	-0.9814		
9.41	-1.0013	13.37	-0.9454		
13.37	-0.9685	18.08	-0.9116		
18.08	-0.9255	23.64	-0.7208		
23.64	-0.6496	31.47	-0.4410		
31.47	-0.4280	41.05	-0.4551		
41.05	-0.4514	53.16	-0.4219		
53.16	-0.4213	70.31	-0.3625		
70.31	-0.3745	84.88	-0.3330		
84.88	-0.3334	100.00	-0.2300		
100.00	-0.2362	108.98	-0.1756		
108.98	-0.1770				

M = 0.792

mfr = 0.644 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4521	-16.79	0.4468	-6.39	0.7794
-6.39	0.7861	-3.01	1.0240	-3.01	1.0070
-3.01	1.0093	-1.63	1.1241	-1.63	1.1405
-1.63	1.1364	-0.70	1.1615	-0.70	1.1543
-0.70	1.1600	-0.18	1.0351	-0.18	1.0307
-0.18	1.0082	0.00	0.6483	0.00	0.6872
0.00	0.6311	0.13	0.1737	0.52	-0.3094
0.13	0.0820	0.52	-0.3696	2.04	-0.8116
0.52	-0.3775	1.15	-0.6284	4.55	-0.9156
1.15	-0.5741	2.04	-0.7928	9.41	-0.9571
2.04	-0.8603	3.17	-0.8766	23.64	-0.5180
3.17	-0.8905	4.55	-0.8953	53.16	-0.4207
4.55	-0.9015	6.76	-0.9133	100.00	-0.2264
6.76	-0.9526	9.41	-0.8997		
9.41	-0.9147	13.37	-0.8670		
13.37	-0.8957	18.08	-0.7633		
18.08	-0.7999	23.64	-0.4793		
23.64	-0.4794	31.47	-0.4872		
31.47	-0.4797	41.05	-0.4735		
41.05	-0.4638	53.16	-0.4219		
53.16	-0.4116	70.31	-0.3579		
70.31	-0.3676	84.88	-0.3342		
84.88	-0.3239	100.00	-0.2356		
100.00	-0.2276	108.98	-0.1815		
108.98	-0.1705				

Table 7. Continued

(e) Concluded

M = 0.793

mfr = 0.693 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	0.2717	-16.79	0.2817	-6.39	0.6389
-6.39	0.6276	-3.01	0.9263	-3.01	0.9033
-3.01	0.9514	-1.63	1.0892	-1.63	1.0974
-1.63	1.0886	-0.70	1.1664	-0.70	1.1531
-0.70	1.1681	-0.18	1.0999	-0.18	1.1102
-0.18	1.0844	0.00	0.7916	0.00	0.7833
0.00	0.7465	0.13	0.3728	0.52	-0.0998
0.13	0.2407	0.52	-0.1207	2.04	-0.6041
0.52	-0.1944	1.15	-0.3913	4.55	-0.7492
1.15	-0.4404	2.04	-0.6109	9.41	-0.6876
2.04	-0.6003	3.17	-0.7011	23.64	-0.4976
3.17	-0.7383	4.55	-0.7194	53.16	-0.3989
4.55	-0.7322	6.76	-0.7413	100.00	-0.2148
6.76	-0.7864	9.41	-0.7790		
9.41	-0.7567	13.37	-0.7154		
13.37	-0.7413	18.08	-0.5663		
18.08	-0.5745	23.64	-0.4904		
23.64	-0.4895	31.47	-0.5137		
31.47	-0.4807	41.05	-0.4751		
41.05	-0.4595	53.16	-0.4316		
53.16	-0.4176	70.31	-0.3756		
70.31	-0.3752	84.88	-0.3262		
84.88	-0.3380	100.00	-0.2309		
100.00	-0.2390	108.98	-0.1741		
108.98	-0.1760				

M = 0.793

mfr = 0.744 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.0031	-16.79	0.0138	-6.39	0.4538
-6.39	0.4481	-3.01	0.7993	-3.01	0.8015
-3.01	0.8199	-1.63	0.9952	-1.63	1.0253
-1.63	1.0285	-0.70	1.1537	-0.70	1.1471
-0.70	1.1600	-0.18	1.1465	-0.18	1.1410
-0.18	1.1251	0.00	0.8915	0.00	0.9485
0.00	0.8789	0.13	0.5400	0.52	0.1108
0.13	0.4045	0.52	0.0597	2.04	-0.3944
0.52	0.0517	1.15	-0.2124	4.55	-0.5835
1.15	-0.2508	2.04	-0.3591	9.41	-0.6336
2.04	-0.3980	3.17	-0.4985	23.64	-0.4584
3.17	-0.5041	4.55	-0.4751	53.16	-0.3861
4.55	-0.5876	6.76	-0.5768	100.00	-0.2160
6.76	-0.5525	9.41	-0.5418		
9.41	-0.6293	13.37	-0.5017		
13.37	-0.5009	18.08	-0.5092		
18.08	-0.5306	23.64	-0.4564		
23.64	-0.4825	31.47	-0.4528		
31.47	-0.4249	41.05	-0.4076		
41.05	-0.4242	53.16	-0.3898		
53.16	-0.3800	70.31	-0.3285		
70.31	-0.3460	84.88	-0.3177		
84.88	-0.3064	100.00	-0.2207		
100.00	-0.2155	108.98	-0.1677		
108.98	-0.1582				

M = 0.792

mfr = 0.791 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.3259	-16.79	-0.3233	-6.39	0.2756
-6.39	0.2657	-3.01	0.6645	-3.01	0.6628
-3.01	0.7044	-1.63	0.9106	-1.63	0.9510
-1.63	0.9277	-0.70	1.1128	-0.70	1.1198
-0.70	1.1318	-0.18	1.1631	-0.18	1.1623
-0.18	1.1582	0.00	0.9855	0.00	1.0272
0.00	0.9551	0.13	0.6828	0.52	0.3256
0.13	0.6080	0.52	0.2824	2.04	-0.1920
0.52	0.2537	1.15	0.0051	4.55	-0.3837
1.15	-0.0613	2.04	-0.1840	9.41	-0.4251
2.04	-0.1613	3.17	-0.3261	23.64	-0.4167
3.17	-0.3383	4.55	-0.3495	53.16	-0.3619
4.55	-0.4324	6.76	-0.4068	100.00	-0.2083
6.76	-0.4115	9.41	-0.4306		
9.41	-0.3953	13.37	-0.4259		
13.37	-0.4326	18.08	-0.4171		
18.08	-0.4292	23.64	-0.4132		
23.64	-0.4324	31.47	-0.4061		
31.47	-0.4080	41.05	-0.3762		
41.05	-0.3935	53.16	-0.3621		
53.16	-0.3620	70.31	-0.3124		
70.31	-0.3280	84.88	-0.2954		
84.88	-0.2997	100.00	-0.2008		
100.00	-0.2105	108.98	-0.1481		
108.98	-0.1535				

Table 7. Continued

(f) M = 0.82

M = 0.817

mfr = 0.286 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.1194	-16.79	1.1145	-6.39	1.1808
-6.39	1.1805	-3.01	1.1391	-3.01	1.1360
-3.01	1.1351	-1.63	1.0317	-1.63	0.9867
-1.63	1.0197	-0.70	0.7927	-0.70	0.7738
-0.70	0.7802	-0.18	0.3909	-0.18	0.3901
-0.18	0.3451	0.00	-0.1887	0.00	-0.1397
0.00	-0.2318	0.13	-0.8249	0.52	-1.3131
0.13	-0.8842	0.52	-1.3493	2.04	-1.5978
0.52	-1.3921	1.15	-1.5059	4.55	-1.6244
1.15	-1.5071	2.04	-1.5966	9.41	-1.5662
2.04	-1.6104	3.17	-1.6387	23.64	-1.3520
3.17	-1.6451	4.55	-1.6333	53.16	-1.1170
4.55	-1.6437	6.76	-1.6044	100.00	-0.2621
6.76	-1.5723	9.41	-1.5507		
9.41	-1.5465	13.37	-1.4793		
13.37	-1.4824	18.08	-1.4280		
18.08	-1.4206	23.64	-1.3520		
23.64	-1.3182	31.47	-1.2514		
31.47	-1.2523	41.05	-1.1776		
41.05	-1.1688	53.16	-1.0754		
53.16	-1.0906	70.31	-0.9394		
70.31	-0.9326	84.88	-0.3828		
84.88	-0.3904	100.00	-0.1997		
100.00	-0.1967	108.98	-0.0907		
108.98	-0.1260				

M = 0.819

mfr = 0.385 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0205	-16.79	1.0266	-6.39	1.1560
-6.39	1.1509	-3.01	1.1800	-3.01	1.1813
-3.01	1.1794	-1.63	1.1229	-1.63	1.1000
-1.63	1.1202	-0.70	0.9446	-0.70	0.9440
-0.70	0.9084	-0.18	0.6017	-0.18	0.5944
-0.18	0.5540	0.00	0.0456	0.00	0.0897
0.00	0.0040	0.13	-0.5578	0.52	-1.0961
0.13	-0.6610	0.52	-1.1484	2.04	-1.4246
0.52	-1.1919	1.15	-1.3423	4.55	-1.4584
1.15	-1.3414	2.04	-1.4138	9.41	-1.4084
2.04	-1.4308	3.17	-1.4492	23.64	-1.1892
3.17	-1.4575	4.55	-1.4592	53.16	-0.9923
4.55	-1.4575	6.76	-1.4207	100.00	-0.1312
6.76	-1.4336	9.41	-1.3884		
9.41	-1.3870	13.37	-1.3484		
13.37	-1.3438	18.08	-1.2835		
18.08	-1.2802	23.64	-1.2066		
23.64	-1.1584	31.47	-1.1320		
31.47	-1.1406	41.05	-1.0738		
41.05	-1.0677	53.16	-0.9780		
53.16	-0.9875	70.31	-0.6662		
70.31	-0.5919	84.88	-0.2382		
84.88	-0.2506	100.00	-0.1279		
100.00	-0.1451	108.98	-0.1018		
108.98	-0.1044				

M = 0.816

mfr = 0.515 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8171	-16.79	0.8059	-6.39	1.0149
-6.39	1.0300	-3.01	1.1546	-3.01	1.1371
-3.01	1.1593	-1.63	1.1746	-1.63	1.1596
-1.63	1.1743	-0.70	1.1040	-0.70	1.0838
-0.70	1.0788	-0.18	0.8466	-0.18	0.8704
-0.18	0.8123	0.00	0.3583	0.00	0.4079
0.00	0.3062	0.13	-0.1773	0.52	-0.7290
0.13	-0.3135	0.52	-0.7883	2.04	-1.1264
0.52	-0.8573	1.15	-0.9846	4.55	-1.2020
1.15	-1.0065	2.04	-1.1183	9.41	-1.1854
2.04	-1.1473	3.17	-1.1985	23.64	-1.0089
3.17	-1.1973	4.55	-1.2039	53.16	-0.4044
4.55	-1.2299	6.76	-1.2093	100.00	-0.2205
6.76	-1.2183	9.41	-1.1931		
9.41	-1.1672	13.37	-1.1245		
13.37	-1.1380	18.08	-1.1048		
18.08	-1.0896	23.64	-1.0270		
23.64	-1.0196	31.47	-0.9926		
31.47	-0.9760	41.05	-0.8847		
41.05	-0.8999	53.16	-0.4722		
53.16	-0.5015	70.31	-0.2695		
70.31	-0.2717	84.88	-0.3142		
84.88	-0.2971	100.00	-0.2338		
100.00	-0.2274	108.98	-0.1815		
108.98	-0.1643				

M = 0.818

mfr = 0.513 and α = 1.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8396	-16.79	0.8119	-6.39	0.9962
-6.39	1.0531	-3.01	1.1550	-3.01	1.1359
-3.01	1.1669	-1.63	1.1772	-1.63	1.1745
-1.63	1.1706	-0.70	1.1056	-0.70	1.1069
-0.70	1.0504	-0.18	0.8579	-0.18	0.8993
-0.18	0.7718	0.00	0.3538	0.00	0.4534
0.00	0.2817	0.13	-0.1705	0.52	-0.6218
0.13	-0.3904	0.52	-0.7780	2.04	-1.0500
0.52	-0.9143	1.15	-0.9935	4.55	-1.1354
1.15	-1.1009	2.04	-1.1165	9.41	-1.1208
2.04	-1.2286	3.17	-1.1966	23.64	-0.9108
3.17	-1.2752	4.55	-1.2024	53.16	-0.3128
4.55	-1.2714	6.76	-1.1962	100.00	-0.2286
6.76	-1.2930	9.41	-1.1728		
9.41	-1.2448	13.37	-1.1439		
13.37	-1.2297	18.08	-1.0962		
18.08	-1.1769	23.64	-1.0100		
23.64	-1.1214	31.47	-0.9810		
31.47	-1.0924	41.05	-0.8988		
41.05	-1.0160	53.16	-0.4705		
53.16	-0.8304	70.31	-0.2828		
70.31	-0.2880	84.88	-0.2904		
84.88	-0.2284	100.00	-0.2242		
100.00	-0.1839	108.98	-0.1713		
108.98	-0.1421				

M = 0.817

mfr = 0.511 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8576	-16.79	0.8094	-6.39	0.9732
-6.39	1.0692	-3.01	1.1522	-3.01	1.1249
-3.01	1.1721	-1.63	1.1756	-1.63	1.1764
-1.63	1.1639	-0.70	1.1001	-0.70	1.1374
-0.70	1.0259	-0.18	0.8465	-0.18	0.9370
-0.18	0.7197	0.00	0.3564	0.00	0.5187
0.00	0.1906	0.13	-0.1745	0.52	-0.5116
0.13	-0.4777	0.52	-0.8203	2.04	-0.9646
0.52	-1.0117	1.15	-0.9846	4.55	-1.0608
1.15	-1.1891	2.04	-1.1131	9.41	-1.0050
2.04	-1.3018	3.17	-1.1966	23.64	-0.7945
3.17	-1.3593	4.55	-1.2174	53.16	-0.3800
4.55	-1.3621	6.76	-1.2159	100.00	-0.2333
6.76	-1.3644	9.41	-1.1785		
9.41	-1.3371	13.37	-1.1301		
13.37	-1.3006	18.08	-1.0793		
18.08	-1.2323	23.64	-1.0177		
23.64	-1.1669	31.47	-0.9831		
31.47	-1.1419	41.05	-0.9031		
41.05	-1.0957	53.16	-0.4198		
53.16	-0.9463	70.31	-0.2930		
70.31	-0.3171	84.88	-0.3122		
84.88	-0.1989	100.00	-0.2284		
100.00	-0.1616	108.98	-0.1746		
108.98	-0.1266				

M = 0.817

mfr = 0.511 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8769	-16.79	0.8070	-6.39	0.9381
-6.39	1.0878	-3.01	1.1514	-3.01	1.1076
-3.01	1.1750	-1.63	1.1728	-1.63	1.1739
-1.63	1.1566	-0.70	1.0950	-0.70	1.1470
-0.70	1.0034	-0.18	0.8561	-0.18	0.9826
-0.18	0.6743	0.00	0.3391	0.00	0.6068
0.00	0.1388	0.13	-0.1972	0.52	-0.4024
0.13	-0.5120	0.52	-0.7579	2.04	-0.8649
0.52	-1.0751	1.15	-0.9958	4.55	-0.9131
1.15	-1.2676	2.04	-1.1374	9.41	-0.8591
2.04	-1.3844	3.17	-1.1920	23.64	-0.5860
3.17	-1.4074	4.55	-1.2189	53.16	-0.4343
4.55	-1.4197	6.76	-1.2043	100.00	-0.2384
6.76	-1.4067	9.41	-1.1608		
9.41	-1.3906	13.37	-1.1255		
13.37	-1.3433	18.08	-1.0958		
18.08	-1.2926	23.64	-1.0200		
23.64	-1.2614	31.47	-0.9558		
31.47	-1.1981	41.05	-0.8903		
41.05	-1.1505	53.16	-0.4736		
53.16	-0.9402	70.31	-0.3544		
70.31	-0.4408	84.88	-0.3255		
84.88	-0.2877	100.00	-0.2372		
100.00	-0.1363	108.98	-0.1838		
108.98	-0.1010				

Table 7. Continued

(f) Continued

M = 0.819

mfr = 0.563 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7057	-16.79	0.6925	-6.39	0.9587
-6.39	0.9613	-3.01	1.1226	-3.01	1.1162
-3.01	1.1360	-1.63	1.1762	-1.63	1.1755
-1.63	1.1778	-0.70	1.1376	-0.70	1.1382
-0.70	1.1289	-0.18	0.9259	-0.18	0.9428
-0.18	0.8922	0.00	0.4805	0.00	0.5314
0.00	0.4357	0.13	-0.0165	0.52	-0.5461
0.13	-0.1573	0.52	-0.6110	2.04	-1.0000
0.52	-0.6375	1.15	-0.8410	4.55	-1.0818
1.15	-0.8501	2.04	-1.0000	9.41	-1.0580
2.04	-0.9864	3.17	-1.0626	23.64	-0.9393
3.17	-1.1115	4.55	-1.0875	53.16	-0.3498
4.55	-1.0958	6.76	-1.1163	100.00	-0.2301
6.76	-1.1348	9.41	-1.0472		
9.41	-1.0774	13.37	-1.0380		
13.37	-1.0699	18.08	-0.9954		
18.08	-1.0278	23.64	-0.9390		
23.64	-0.9331	31.47	-0.9038		
31.47	-0.8863	41.05	-0.8045		
41.05	-0.8371	53.16	-0.3302		
53.16	-0.3412	70.31	-0.3362		
70.31	-0.3237	84.88	-0.3350		
84.88	-0.3214	100.00	-0.2293		
100.00	-0.2322	108.98	-0.1688		
108.98	-0.1676				

M = 0.818

mfr = 0.613 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5795	-16.79	0.5701	-6.39	0.8586
-6.39	0.8687	-3.01	1.0622	-3.01	1.0586
-3.01	1.0778	-1.63	1.1617	-1.63	1.1702
-1.63	1.1673	-0.70	1.1701	-0.70	1.1653
-0.70	1.1581	-0.18	1.0147	-0.18	1.0066
-0.18	0.9854	0.00	0.6064	0.00	0.6408
0.00	0.5883	0.13	0.1365	0.52	-0.3919
0.13	-0.0219	0.52	-0.4096	2.04	-0.8550
0.52	-0.4713	1.15	-0.6500	4.55	-0.9565
1.15	-0.6675	2.04	-0.8431	9.41	-0.9703
2.04	-0.8637	3.17	-0.9016	23.64	-0.8028
3.17	-0.9495	4.55	-0.9204	53.16	-0.3796
4.55	-0.9707	6.76	-0.9538	100.00	-0.2283
6.76	-0.9696	9.41	-0.9331		
9.41	-0.9806	13.37	-0.9023		
13.37	-0.9177	18.08	-0.8662		
18.08	-0.9006	23.64	-0.8305		
23.64	-0.8637	31.47	-0.7728		
31.47	-0.7734	41.05	-0.4322		
41.05	-0.6252	53.16	-0.3653		
53.16	-0.3537	70.31	-0.3597		
70.31	-0.3593	84.88	-0.3381		
84.88	-0.3335	100.00	-0.2292		
100.00	-0.2266	108.98	-0.1675		
108.98	-0.1668				

M = 0.817

mfr = 0.612 and α = 1.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6118	-16.79	0.5623	-6.39	0.8203
-6.39	0.9028	-3.01	1.0726	-3.01	1.0336
-3.01	1.0968	-1.63	1.1619	-1.63	1.1616
-1.63	1.1734	-0.70	1.1661	-0.70	1.1741
-0.70	1.1441	-0.18	1.0111	-0.18	1.0518
-0.18	0.9578	0.00	0.6072	0.00	0.6950
0.00	0.4759	0.13	0.1477	0.52	-0.2511
0.13	-0.0771	0.52	-0.4443	2.04	-0.7215
0.52	-0.6242	1.15	-0.6791	4.55	-0.8319
1.15	-0.7677	2.04	-0.8523	9.41	-0.8554
2.04	-0.9446	3.17	-0.9301	23.64	-0.6495
3.17	-1.0227	4.55	-0.9625	53.16	-0.4289
4.55	-1.0813	6.76	-0.9702	100.00	-0.2313
6.76	-1.0665	9.41	-0.9282		
9.41	-1.0620	13.37	-0.8997		
13.37	-1.0160	18.08	-0.8955		
18.08	-0.9853	23.64	-0.7807		
23.64	-0.9548	31.47	-0.8020		
31.47	-0.8771	41.05	-0.5784		
41.05	-0.7876	53.16	-0.3812		
53.16	-0.3142	70.31	-0.3679		
70.31	-0.3429	84.88	-0.3402		
84.88	-0.3261	100.00	-0.2298		
100.00	-0.2230	108.98	-0.1688		
108.98	-0.1682				

M = 0.818

mfr = 0.613 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6492	-16.79	0.5636	-6.39	0.7752
-6.39	0.9355	-3.01	1.0695	-3.01	0.9996
-3.01	1.1210	-1.63	1.1621	-1.63	1.1514
-1.63	1.1791	-0.70	1.1686	-0.70	1.1803
-0.70	1.1295	-0.18	1.0071	-0.18	1.0894
-0.18	0.9099	0.00	0.5965	0.00	0.7646
0.00	0.4473	0.13	0.1642	0.52	-0.1110
0.13	-0.1642	0.52	-0.4159	2.04	-0.5587
0.52	-0.7022	1.15	-0.6624	4.55	-0.7262
1.15	-0.8341	2.04	-0.8532	9.41	-0.6924
2.04	-1.0432	3.17	-0.9113	23.64	-0.4854
3.17	-1.1004	4.55	-0.9547	53.16	-0.4086
4.55	-1.1564	6.76	-0.9593	100.00	-0.2254
6.76	-1.1612	9.41	-0.9243		
9.41	-1.1192	13.37	-0.9186		
13.37	-1.1098	18.08	-0.8670		
18.08	-1.0761	23.64	-0.7937		
23.64	-1.0172	31.47	-0.7709		
31.47	-1.0138	41.05	-0.5787		
41.05	-0.8840	53.16	-0.4100		
53.16	-0.5252	70.31	-0.3648		
70.31	-0.2542	84.88	-0.3351		
84.88	-0.2934	100.00	-0.2306		
100.00	-0.2131	108.98	-0.1705		
108.98	-0.1611				

M = 0.817

mfr = 0.613 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6697	-16.79	0.5695	-6.39	0.7306
-6.39	0.9622	-3.01	1.0677	-3.01	0.9618
-3.01	1.1381	-1.63	1.1558	-1.63	1.1263
-1.63	1.1776	-0.70	1.1658	-0.70	1.1778
-0.70	1.1089	-0.18	1.0079	-0.18	1.1187
-0.18	0.8671	0.00	0.5883	0.00	0.8447
0.00	0.3930	0.13	0.1097	0.52	0.0273
0.13	-0.2691	0.52	-0.3899	2.04	-0.4372
0.52	-0.7952	1.15	-0.6441	4.55	-0.5433
1.15	-0.9782	2.04	-0.8056	9.41	-0.5640
2.04	-1.1118	3.17	-0.9133	23.64	-0.4368
3.17	-1.1740	4.55	-0.9402	53.16	-0.3914
4.55	-1.2048	6.76	-0.9499	100.00	-0.2260
6.76	-1.2445	9.41	-0.9187		
9.41	-1.2130	13.37	-0.8786		
13.37	-1.1944	18.08	-0.8721		
18.08	-1.1470	23.64	-0.7802		
23.64	-1.1234	31.47	-0.7615		
31.47	-1.0624	41.05	-0.5560		
41.05	-1.0439	53.16	-0.4578		
53.16	-0.6627	70.31	-0.3731		
70.31	-0.2530	84.88	-0.3298		
84.88	-0.2232	100.00	-0.2356		
100.00	-0.1941	108.98	-0.1730		
108.98	-0.1475				

M = 0.817

mfr = 0.644 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4843	-16.79	0.4570	-6.39	0.7865
-6.39	0.8071	-3.01	1.0352	-3.01	1.0130
-3.01	1.0354	-1.63	1.1474	-1.63	1.1449
-1.63	1.1459	-0.70	1.1758	-0.70	1.1561
-0.70	1.1727	-0.18	1.0483	-0.18	1.0559
-0.18	1.0527	0.00	0.6733	0.00	0.7020
0.00	0.6595	0.13	0.2387	0.52	-0.2693
0.13	0.1271	0.52	-0.3008	2.04	-0.7596
0.52	-0.3638	1.15	-0.5656	4.55	-0.8295
1.15	-0.5629	2.04	-0.7450	9.41	-0.8914
2.04	-0.7848	3.17	-0.8180	23.64	-0.7688
3.17	-0.8239	4.55	-0.8249	53.16	-0.3983
4.55	-0.8314	6.76	-0.9010	100.00	-0.2265
6.76	-0.9148	9.41	-0.8633		
9.41	-0.8847	13.37	-0.8195		
13.37	-0.8780	18.08	-0.7703		
18.08	-0.7952	23.64	-0.7546		
23.64	-0.7568	31.47	-0.6939		
31.47	-0.5520	41.05	-0.4377		
41.05	-0.4015	53.16	-0.4253		
53.16	-0.3970	70.31	-0.3808		
70.31	-0.3751	84.88	-0.3611		
84.88	-0.3348	100.00	-0.2449		
100.00	-0.2254	108.98	-0.1896		
108.98	-0.1685				

Table 7. Continued

(f) Continued

M = 0.817

mfr = 0.693 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.2828	-16.79	0.2851	-6.39	0.6555
-6.39	0.6848	-3.01	0.9514	-3.01	0.9272
-3.01	0.9376	-1.63	1.0968	-1.63	1.1106
-1.63	1.1068	-0.70	1.1767	-0.70	1.1636
-0.70	1.1784	-0.18	1.1091	-0.18	1.1148
-0.18	1.0986	0.00	0.8157	0.00	0.8061
0.00	0.7500	0.13	0.3773	0.52	-0.0514
0.13	0.2750	0.52	-0.0865	2.04	-0.5729
0.52	-0.1462	1.15	-0.3932	4.55	-0.6266
1.15	-0.3758	2.04	-0.5498	9.41	-0.7763
2.04	-0.5586	3.17	-0.6431	23.64	-0.6040
3.17	-0.6549	4.55	-0.6861	53.16	-0.4193
4.55	-0.7157	6.76	-0.7210	100.00	-0.2208
6.76	-0.7717	9.41	-0.7068		
9.41	-0.7587	13.37	-0.6872		
13.37	-0.7452	18.08	-0.6623		
18.08	-0.7068	23.64	-0.5886		
23.64	-0.5654	31.47	-0.4848		
31.47	-0.4796	41.05	-0.4740		
41.05	-0.4584	53.16	-0.4368		
53.16	-0.4277	70.31	-0.3704		
70.31	-0.3700	84.88	-0.3447		
84.88	-0.3280	100.00	-0.2327		
100.00	-0.2210	108.98	-0.1718		
108.98	-0.1626				

M = 0.816

mfr = 0.692 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3387	-16.79	0.2878	-6.39	0.5948
-6.39	0.7316	-3.01	0.9422	-3.01	0.8821
-3.01	0.9929	-1.63	1.0912	-1.63	1.0890
-1.63	1.1293	-0.70	1.1766	-0.70	1.1677
-0.70	1.1780	-0.18	1.1153	-0.18	1.1180
-0.18	1.0572	0.00	0.8063	0.00	0.8951
0.00	0.7068	0.13	0.3716	0.52	0.0389
0.13	0.1673	0.52	-0.1055	2.04	-0.4521
0.52	-0.2727	1.15	-0.3859	4.55	-0.5393
1.15	-0.5282	2.04	-0.5666	9.41	-0.5974
2.04	-0.7191	3.17	-0.6592	23.64	-0.4521
3.17	-0.7950	4.55	-0.7207	53.16	-0.4059
4.55	-0.8354	6.76	-0.7403	100.00	-0.2200
6.76	-0.8498	9.41	-0.7376		
9.41	-0.8481	13.37	-0.7426		
13.37	-0.8348	18.08	-0.6619		
18.08	-0.8200	23.64	-0.5977		
23.64	-0.7775	31.47	-0.5094		
31.47	-0.6500	41.05	-0.4690		
41.05	-0.4349	53.16	-0.4369		
53.16	-0.3983	70.31	-0.3660		
70.31	-0.3761	84.88	-0.3387		
84.88	-0.3339	100.00	-0.2345		
100.00	-0.2225	108.98	-0.1756		
108.98	-0.1650				

M = 0.818

mfr = 0.691 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3914	-16.79	0.2972	-6.39	0.5537
-6.39	0.7568	-3.01	0.9553	-3.01	0.8419
-3.01	1.0416	-1.63	1.0963	-1.63	1.0559
-1.63	1.1447	-0.70	1.1761	-0.70	1.1569
-0.70	1.1735	-0.18	1.1120	-0.18	1.1555
-0.18	1.0304	0.00	0.7957	0.00	0.9339
0.00	0.6347	0.13	0.4156	0.52	0.2098
0.13	0.0698	0.52	-0.1084	2.04	-0.2702
0.52	-0.4158	1.15	-0.3633	4.55	-0.4408
1.15	-0.6430	2.04	-0.5489	9.41	-0.5002
2.04	-0.8365	3.17	-0.6876	23.64	-0.4182
3.17	-0.9190	4.55	-0.6681	53.16	-0.3851
4.55	-0.9337	6.76	-0.7367	100.00	-0.2138
6.76	-0.9460	9.41	-0.7232		
9.41	-0.9528	13.37	-0.7014		
13.37	-0.9223	18.08	-0.6926		
18.08	-0.9497	23.64	-0.5998		
23.64	-0.9088	31.47	-0.5868		
31.47	-0.8351	41.05	-0.4833		
41.05	-0.8085	53.16	-0.4521		
53.16	-0.3363	70.31	-0.3845		
70.31	-0.3523	84.88	-0.3358		
84.88	-0.3301	100.00	-0.2366		
100.00	-0.2319	108.98	-0.1834		
108.98	-0.1692				

M = 0.818

mfr = 0.692 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4265	-16.79	0.2787	-6.39	0.4795
-6.39	0.8043	-3.01	0.9408	-3.01	0.7898
-3.01	1.0616	-1.63	1.0914	-1.63	1.0194
-1.63	1.1593	-0.70	1.1751	-0.70	1.1349
-0.70	1.1688	-0.18	1.1051	-0.18	1.1693
-0.18	0.9948	0.00	0.7995	0.00	1.0057
0.00	0.5610	0.13	0.3784	0.52	0.3162
0.13	-0.0041	0.52	-0.1056	2.04	-0.1496
0.52	-0.4946	1.15	-0.3869	4.55	-0.2991
1.15	-0.7122	2.04	-0.5442	9.41	-0.3563
2.04	-0.9194	3.17	-0.6703	23.64	-0.3551
3.17	-0.9737	4.55	-0.6998	53.16	-0.3555
4.55	-1.0286	6.76	-0.7508	100.00	-0.2083
6.76	-1.0695	9.41	-0.7213		
9.41	-1.0235	13.37	-0.6803		
13.37	-1.0465	18.08	-0.6925		
18.08	-1.0238	23.64	-0.5492		
23.64	-0.9297	31.47	-0.5911		
31.47	-0.9604	41.05	-0.5240		
41.05	-0.8949	53.16	-0.4468		
53.16	-0.3277	70.31	-0.3788		
70.31	-0.2925	84.88	-0.3460		
84.88	-0.3219	100.00	-0.2365		
100.00	-0.2178	108.98	-0.1793		
108.98	-0.1578				

M = 0.817

mfr = 0.739 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.0588	-16.79	0.0495	-6.39	0.5122
-6.39	0.5171	-3.01	0.8399	-3.01	0.8344
-3.01	0.8799	-1.63	1.0169	-1.63	1.0450
-1.63	1.0385	-0.70	1.1661	-0.70	1.1502
-0.70	1.1690	-0.18	1.1485	-0.18	1.1470
-0.18	1.1333	0.00	0.8892	0.00	0.9206
0.00	0.8493	0.13	0.5435	0.52	0.1282
0.13	0.4325	0.52	0.0816	2.04	-0.4070
0.52	0.0184	1.15	-0.2021	4.55	-0.5582
1.15	-0.1985	2.04	-0.3759	9.41	-0.5693
2.04	-0.3751	3.17	-0.4458	23.64	-0.4818
3.17	-0.4891	4.55	-0.5735	53.16	-0.4089
4.55	-0.5456	6.76	-0.5782	100.00	-0.2143
6.76	-0.6459	9.41	-0.5597		
9.41	-0.5821	13.37	-0.6124		
13.37	-0.6335	18.08	-0.4953		
18.08	-0.5561	23.64	-0.4784		
23.64	-0.4888	31.47	-0.4939		
31.47	-0.4949	41.05	-0.4607		
41.05	-0.4533	53.16	-0.4162		
53.16	-0.4072	70.31	-0.3658		
70.31	-0.3584	84.88	-0.3298		
84.88	-0.3215	100.00	-0.2298		
100.00	-0.2230	108.98	-0.1677		
108.98	-0.1558				

M = 0.818

mfr = 0.793 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.3141	-16.79	-0.3319	-6.39	0.2852
-6.39	0.3136	-3.01	0.6744	-3.01	0.6865
-3.01	0.6948	-1.63	0.9245	-1.63	0.9622
-1.63	0.9482	-0.70	1.1229	-0.70	1.1290
-0.70	1.1409	-0.18	1.1740	-0.18	1.1740
-0.18	1.1714	0.00	0.9901	0.00	1.0337
0.00	0.9797	0.13	0.6996	0.52	0.3258
0.13	0.6372	0.52	0.2511	2.04	-0.1509
0.52	0.2425	1.15	-0.0093	4.55	-0.3576
1.15	-0.0244	2.04	-0.1823	9.41	-0.5199
2.04	-0.2712	3.17	-0.2998	23.64	-0.4147
3.17	-0.2838	4.55	-0.3591	53.16	-0.3924
4.55	-0.3762	6.76	-0.3939	100.00	-0.2091
6.76	-0.3953	9.41	-0.4648		
9.41	-0.4307	13.37	-0.4319		
13.37	-0.4258	18.08	-0.4023		
18.08	-0.4501	23.64	-0.4357		
23.64	-0.4348	31.47	-0.4370		
31.47	-0.4218	41.05	-0.4286		
41.05	-0.4467	53.16	-0.3823		
53.16	-0.3861	70.31	-0.3344		
70.31	-0.3472	84.88	-0.3104		
84.88	-0.3121	100.00	-0.2083		
100.00	-0.2106	108.98	-0.1512		
108.98	-0.1510				

Table 7. Continued

(f) Concluded

M = 0.817

mfr = 0.794 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2501	-16.79	-0.3295	-6.39	0.2355
-6.39	0.3657	-3.01	0.6745	-3.01	0.6305
-3.01	0.7653	-1.63	0.9216	-1.63	0.9351
-1.63	0.9886	-0.70	1.1301	-0.70	1.1070
-0.70	1.1572	-0.18	1.1733	-0.18	1.1748
-0.18	1.1657	0.00	0.9956	0.00	1.0584
0.00	0.9441	0.13	0.7028	0.52	0.4568
0.13	0.5156	0.52	0.2995	2.04	-0.0277
0.52	0.1017	1.15	-0.0067	4.55	-0.2651
1.15	-0.1011	2.04	-0.1547	9.41	-0.3291
2.04	-0.3279	3.17	-0.2697	23.64	-0.3689
3.17	-0.4255	4.55	-0.3601	53.16	-0.3632
4.55	-0.5124	6.76	-0.4038	100.00	-0.2061
6.76	-0.5486	9.41	-0.4506		
9.41	-0.5632	13.37	-0.3954		
13.37	-0.5851	18.08	-0.4667		
18.08	-0.5407	23.64	-0.4302		
23.64	-0.5186	31.47	-0.4196		
31.47	-0.5087	41.05	-0.4228		
41.05	-0.4490	53.16	-0.3845		
53.16	-0.4006	70.31	-0.3373		
70.31	-0.3562	84.88	-0.3053		
84.88	-0.3143	100.00	-0.2038		
100.00	-0.2160	108.98	-0.1474		
108.98	-0.1502				

M = 0.817

mfr = 0.790 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2082	-16.79	-0.3172	-6.39	0.1859
-6.39	0.4149	-3.01	0.6684	-3.01	0.5517
-3.01	0.7991	-1.63	0.9172	-1.63	0.8733
-1.63	1.0013	-0.70	1.1181	-0.70	1.0780
-0.70	1.1718	-0.18	1.1730	-0.18	1.1738
-0.18	1.1423	0.00	0.9855	0.00	1.1089
0.00	0.8917	0.13	0.7325	0.52	0.5267
0.13	0.4318	0.52	0.2767	2.04	-0.0027
0.52	0.0036	1.15	0.0446	4.55	-0.1472
1.15	-0.2178	2.04	-0.2134	9.41	-0.2490
2.04	-0.4377	3.17	-0.2996	23.64	-0.3291
3.17	-0.5714	4.55	-0.3509	53.16	-0.3264
4.55	-0.6010	6.76	-0.3961	100.00	-0.1969
6.76	-0.7006	9.41	-0.3919		
9.41	-0.6931	13.37	-0.4130		
13.37	-0.6977	18.08	-0.4529		
18.08	-0.7009	23.64	-0.4246		
23.64	-0.6559	31.47	-0.4320		
31.47	-0.4906	41.05	-0.4192		
41.05	-0.4589	53.16	-0.3833		
53.16	-0.4210	70.31	-0.3257		
70.31	-0.3630	84.88	-0.3137		
84.88	-0.3207	100.00	-0.2119		
100.00	-0.2123	108.98	-0.1535		
108.98	-0.1530				

M = 0.817

mfr = 0.791 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.1244	-16.79	-0.3445	-6.39	0.0879
-6.39	0.4788	-3.01	0.6748	-3.01	0.4771
-3.01	0.8534	-1.63	0.9167	-1.63	0.7942
-1.63	1.0496	-0.70	1.1192	-0.70	1.0355
-0.70	1.1748	-0.18	1.1711	-0.18	1.1711
-0.18	1.1175	0.00	0.9992	0.00	1.1375
0.00	0.8226	0.13	0.7509	0.52	0.6580
0.13	0.3185	0.52	0.3084	2.04	0.1637
0.52	-0.0849	1.15	0.0288	4.55	-0.0449
1.15	-0.3605	2.04	-0.1298	9.41	-0.1535
2.04	-0.5595	3.17	-0.2652	23.64	-0.2532
3.17	-0.6799	4.55	-0.3767	53.16	-0.3039
4.55	-0.6755	6.76	-0.3825	100.00	-0.1888
6.76	-0.7621	9.41	-0.4614		
9.41	-0.7980	13.37	-0.4162		
13.37	-0.7716	18.08	-0.4400		
18.08	-0.7836	23.64	-0.4204		
23.64	-0.7676	31.47	-0.4332		
31.47	-0.6878	41.05	-0.4352		
41.05	-0.4179	53.16	-0.3913		
53.16	-0.4162	70.31	-0.3389		
70.31	-0.3677	84.88	-0.3193		
84.88	-0.3220	100.00	-0.2209		
100.00	-0.2134	108.98	-0.1597		
108.98	-0.1561				

Table 7. Continued

(g) M = 0.84

M = 0.841

mfr = 0.289 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.1287	-16.79	1.1293	-6.39	1.1924
-6.39	1.1934	-3.01	1.1524	-3.01	1.1526
-3.01	1.1488	-1.63	1.0457	-1.63	1.0047
-1.63	1.0382	-0.70	0.8093	-0.70	0.7981
-0.70	0.7803	-0.18	0.4171	-0.18	0.4211
-0.18	0.3803	0.00	-0.1348	0.00	-0.0997
0.00	-0.1761	0.13	-0.7432	0.52	-1.2268
0.13	-0.8169	0.52	-1.2581	2.04	-1.5084
0.52	-1.2847	1.15	-1.4204	4.55	-1.5230
1.15	-1.4145	2.04	-1.5084	9.41	-1.4659
2.04	-1.5034	3.17	-1.5375	23.64	-1.2905
3.17	-1.5307	4.55	-1.5342	53.16	-1.0532
4.55	-1.5340	6.76	-1.5084	100.00	-0.3840
6.76	-1.5067	9.41	-1.4584		
9.41	-1.4600	13.37	-1.4156		
13.37	-1.4238	18.08	-1.3435		
18.08	-1.3508	23.64	-1.2730		
23.64	-1.2451	31.47	-1.1846		
31.47	-1.1967	41.05	-1.1144		
41.05	-1.1256	53.16	-1.0296		
53.16	-1.0453	70.31	-0.9409		
70.31	-0.9719	84.88	-0.9040		
84.88	-0.8889	100.00	-0.3700		
100.00	-0.3882	108.98	-0.3253		
108.98	-0.3238				

M = 0.842

mfr = 0.383 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0394	-16.79	1.0379	-6.39	1.1672
-6.39	1.1667	-3.01	1.1883	-3.01	1.1906
-3.01	1.1894	-1.63	1.1360	-1.63	1.1122
-1.63	1.1357	-0.70	0.9637	-0.70	0.9522
-0.70	0.9345	-0.18	0.6352	-0.18	0.6407
-0.18	0.5850	0.00	0.0851	0.00	0.1393
0.00	0.0657	0.13	-0.4874	0.52	-1.0227
0.13	-0.6088	0.52	-1.0610	2.04	-1.3267
0.52	-1.0839	1.15	-1.2634	4.55	-1.3676
1.15	-1.2703	2.04	-1.3252	9.41	-1.3099
2.04	-1.3266	3.17	-1.3676	23.64	-1.1449
3.17	-1.3839	4.55	-1.3635	53.16	-0.9664
4.55	-1.3770	6.76	-1.3632	100.00	-0.2948
6.76	-1.3376	9.41	-1.3170		
9.41	-1.3014	13.37	-1.2693		
13.37	-1.2570	18.08	-1.2008		
18.08	-1.2135	23.64	-1.1431		
23.64	-1.1194	31.47	-1.0745		
31.47	-1.0902	41.05	-1.0085		
41.05	-1.0206	53.16	-0.9696		
53.16	-0.9625	70.31	-0.8869		
70.31	-0.9138	84.88	-0.5783		
84.88	-0.6787	100.00	-0.2795		
100.00	-0.2806	108.98	-0.2080		
108.98	-0.1941				

M = 0.841

mfr = 0.503 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8525	-16.79	0.8512	-6.39	1.0602
-6.39	1.0528	-3.01	1.1751	-3.01	1.1732
-3.01	1.1805	-1.63	1.1896	-1.63	1.1818
-1.63	1.1888	-0.70	1.1075	-0.70	1.0821
-0.70	1.0934	-0.18	0.8605	-0.18	0.8579
-0.18	0.8172	0.00	0.3586	0.00	0.3976
0.00	0.3625	0.13	-0.1510	0.52	-0.7198
0.13	-0.3016	0.52	-0.7601	2.04	-1.0963
0.52	-0.7544	1.15	-0.9614	4.55	-1.1712
1.15	-0.9757	2.04	-1.0855	9.41	-1.1027
2.04	-1.0858	3.17	-1.1452	23.64	-0.9748
3.17	-1.1426	4.55	-1.1593	53.16	-0.8530
4.55	-1.1542	6.76	-1.1504	100.00	-0.1379
6.76	-1.1555	9.41	-1.1146		
9.41	-1.1363	13.37	-1.0706		
13.37	-1.0960	18.08	-1.0486		
18.08	-1.0433	23.64	-0.9704		
23.64	-1.0078	31.47	-0.9494		
31.47	-0.9362	41.05	-0.8927		
41.05	-0.8848	53.16	-0.8612		
53.16	-0.8499	70.31	-0.7127		
70.31	-0.7670	84.88	-0.2383		
84.88	-0.2272	100.00	-0.1422		
100.00	-0.1482	108.98	-0.1154		
108.98	-0.1068				

M = 0.841

mfr = 0.516 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8245	-16.79	0.8177	-6.39	1.0157
-6.39	1.0356	-3.01	1.1626	-3.01	1.1595
-3.01	1.1652	-1.63	1.1871	-1.63	1.1751
-1.63	1.1876	-0.70	1.1266	-0.70	1.1105
-0.70	1.1104	-0.18	0.8871	-0.18	0.8741
-0.18	0.8347	0.00	0.3943	0.00	0.4475
0.00	0.3650	0.13	-0.0958	0.52	-0.6648
0.13	-0.1949	0.52	-0.7025	2.04	-1.0464
0.52	-0.7314	1.15	-0.9115	4.55	-1.1508
1.15	-0.9542	2.04	-1.0326	9.41	-1.1075
2.04	-1.0445	3.17	-1.1078	23.64	-0.9305
3.17	-1.1187	4.55	-1.1329	53.16	-0.8590
4.55	-1.1234	6.76	-1.1351	100.00	-0.1569
6.76	-1.1264	9.41	-1.0806		
9.41	-1.0995	13.37	-1.0751		
13.37	-1.0572	18.08	-1.0225		
18.08	-1.0229	23.64	-0.9667		
23.64	-0.9801	31.47	-0.9358		
31.47	-0.9406	41.05	-0.8842		
41.05	-0.8916	53.16	-0.8359		
53.16	-0.8538	70.31	-0.6633		
70.31	-0.6213	84.88	-0.2203		
84.88	-0.2141	100.00	-0.1701		
100.00	-0.1504	108.98	-0.1231		
108.98	-0.1162				

M = 0.841

mfr = 0.518 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8480	-16.79	0.8149	-6.39	1.0055
-6.39	1.0657	-3.01	1.1610	-3.01	1.1361
-3.01	1.1762	-1.63	1.1870	-1.63	1.1767
-1.63	1.1851	-0.70	1.1194	-0.70	1.1194
-0.70	1.0694	-0.18	0.8869	-0.18	0.9163
-0.18	0.8123	0.00	0.4111	0.00	0.5245
0.00	0.3121	0.13	-0.1033	0.52	-0.5849
0.13	-0.3201	0.52	-0.6810	2.04	-0.9598
0.52	-0.8392	1.15	-0.8827	4.55	-1.0526
1.15	-0.9881	2.04	-1.0373	9.41	-1.0515
2.04	-1.1550	3.17	-1.1040	23.64	-0.8842
3.17	-1.1749	4.55	-1.1265	53.16	-0.7202
4.55	-1.1971	6.76	-1.1189	100.00	-0.1823
6.76	-1.2031	9.41	-1.0984		
9.41	-1.1540	13.37	-1.0563		
13.37	-1.1470	18.08	-1.0113		
18.08	-1.1095	23.64	-0.9684		
23.64	-1.0396	31.47	-0.9325		
31.47	-1.0313	41.05	-0.8917		
41.05	-0.9393	53.16	-0.8077		
53.16	-0.9125	70.31	-0.7117		
70.31	-0.7470	84.88	-0.2420		
84.88	-0.2435	100.00	-0.1764		
100.00	-0.1336	108.98	-0.1352		
108.98	-0.0955				

M = 0.842

mfr = 0.520 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8730	-16.79	0.8216	-6.39	0.9846
-6.39	1.0766	-3.01	1.1674	-3.01	1.1258
-3.01	1.1865	-1.63	1.1900	-1.63	1.1833
-1.63	1.1816	-0.70	1.1185	-0.70	1.1421
-0.70	1.0469	-0.18	0.8805	-0.18	0.9728
-0.18	0.7641	0.00	0.4178	0.00	0.5817
0.00	0.2470	0.13	-0.0975	0.52	-0.4542
0.13	-0.3900	0.52	-0.6938	2.04	-0.8605
0.52	-0.9505	1.15	-0.8906	4.55	-0.9788
1.15	-1.0876	2.04	-1.0245	9.41	-0.9449
2.04	-1.2243	3.17	-1.0911	23.64	-0.8072
3.17	-1.2425	4.55	-1.1093	53.16	-0.6265
4.55	-1.2508	6.76	-1.1089	100.00	-0.2158
6.76	-1.2432	9.41	-1.0963		
9.41	-1.2356	13.37	-1.0453		
13.37	-1.1886	18.08	-0.9907		
18.08	-1.1750	23.64	-0.9579		
23.64	-1.1118	31.47	-0.9242		
31.47	-1.0836	41.05	-0.8656		
41.05	-1.0234	53.16	-0.8034		
53.16	-0.9919	70.31	-0.6467		
70.31	-0.8661	84.88	-0.2649		
84.88	-0.3569	100.00	-0.1737		
100.00	-0.1785	108.98	-0.1458		
108.98	-0.1046				

Table 7. Continued

(g) Continued

M = 0.841

mfr = 0.518 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8956	-16.79	0.8267	-6.39	0.9474
-6.39	1.0944	-3.01	1.1633	-3.01	1.1044
-3.01	1.1913	-1.63	1.1863	-1.63	1.1752
-1.63	1.1699	-0.70	1.1170	-0.70	1.1507
-0.70	1.0216	-0.18	0.8765	-0.18	1.0082
-0.18	0.7018	0.00	0.4137	0.00	0.6230
0.00	0.1997	0.13	-0.1119	0.52	-0.3283
0.13	-0.4509	0.52	-0.7059	2.04	-0.7692
0.52	-0.9937	1.15	-0.8981	4.55	-0.8616
1.15	-1.1346	2.04	-1.0362	9.41	-0.8385
2.04	-1.2645	3.17	-1.0969	23.64	-0.6750
3.17	-1.3020	4.55	-1.1144	53.16	-0.5090
4.55	-1.3136	6.76	-1.1272	100.00	-0.2322
6.76	-1.3212	9.41	-1.0932		
9.41	-1.2801	13.37	-1.0533		
13.37	-1.2664	18.08	-1.0154		
18.08	-1.2058	23.64	-0.9491		
23.64	-1.1707	31.47	-0.9233		
31.47	-1.1349	41.05	-0.8530		
41.05	-1.0918	53.16	-0.8137		
53.16	-1.0305	70.31	-0.6988		
70.31	-0.5138	84.88	-0.2761		
84.88	-0.4206	100.00	-0.2074		
100.00	-0.3391	108.98	-0.1631		
108.98	-0.2400				

M = 0.842

mfr = 0.558 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7234	-16.79	0.7272	-6.39	0.9706
-6.39	0.9812	-3.01	1.1393	-3.01	1.1300
-3.01	1.1435	-1.63	1.1860	-1.63	1.1875
-1.63	1.1879	-0.70	1.1463	-0.70	1.1409
-0.70	1.1339	-0.18	0.9380	-0.18	0.9506
-0.18	0.9133	0.00	0.5115	0.00	0.5419
0.00	0.4939	0.13	-0.0161	0.52	-0.5244
0.13	-0.1441	0.52	-0.5902	2.04	-0.9658
0.52	-0.6105	1.15	-0.7423	4.55	-0.9937
1.15	-0.7611	2.04	-0.9327	9.41	-1.0049
2.04	-0.9749	3.17	-0.9885	23.64	-0.8781
3.17	-1.0222	4.55	-1.0245	53.16	-0.7516
4.55	-1.0143	6.76	-1.0301	100.00	-0.1811
6.76	-1.0272	9.41	-1.0164		
9.41	-1.0076	13.37	-0.9799		
13.37	-0.9732	18.08	-0.9617		
18.08	-0.9408	23.64	-0.8684		
23.64	-0.9229	31.47	-0.8607		
31.47	-0.8825	41.05	-0.8239		
41.05	-0.8223	53.16	-0.7614		
53.16	-0.7763	70.31	-0.4883		
70.31	-0.5578	84.88	-0.2400		
84.88	-0.2212	100.00	-0.1834		
100.00	-0.1792	108.98	-0.1450		
108.98	-0.1368				

M = 0.842

mfr = 0.608 and α = 0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6118	-16.79	0.5900	-6.39	0.8889
-6.39	0.8888	-3.01	1.0907	-3.01	1.0893
-3.01	1.1003	-1.63	1.1721	-1.63	1.1830
-1.63	1.1770	-0.70	1.1773	-0.70	1.1749
-0.70	1.1740	-0.18	1.0192	-0.18	1.0114
-0.18	1.0000	0.00	0.6411	0.00	0.6607
0.00	0.5977	0.13	0.1468	0.52	-0.3174
0.13	0.0142	0.52	-0.3702	2.04	-0.7983
0.52	-0.4304	1.15	-0.6281	4.55	-0.8690
1.15	-0.6044	2.04	-0.7660	9.41	-0.8779
2.04	-0.8207	3.17	-0.8493	23.64	-0.8188
3.17	-0.8967	4.55	-0.8790	53.16	-0.7009
4.55	-0.8961	6.76	-0.9143	100.00	-0.2071
6.76	-0.9129	9.41	-0.8994		
9.41	-0.9163	13.37	-0.8641		
13.37	-0.8738	18.08	-0.8285		
18.08	-0.8610	23.64	-0.8058		
23.64	-0.8230	31.47	-0.7657		
31.47	-0.7886	41.05	-0.7405		
41.05	-0.7609	53.16	-0.7033		
53.16	-0.7125	70.31	-0.3304		
70.31	-0.2746	84.88	-0.2982		
84.88	-0.2492	100.00	-0.2102		
100.00	-0.2049	108.98	-0.1575		
108.98	-0.1535				

M = 0.841

mfr = 0.610 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6518	-16.79	0.5969	-6.39	0.8541
-6.39	0.9310	-3.01	1.0895	-3.01	1.0601
-3.01	1.1101	-1.63	1.1733	-1.63	1.1741
-1.63	1.1835	-0.70	1.1785	-0.70	1.1827
-0.70	1.1569	-0.18	1.0316	-0.18	1.0640
-0.18	0.9528	0.00	0.6384	0.00	0.6866
0.00	0.5340	0.13	0.1452	0.52	-0.2302
0.13	-0.0204	0.52	-0.3533	2.04	-0.6516
0.52	-0.5500	1.15	-0.6100	4.55	-0.7750
1.15	-0.7179	2.04	-0.7803	9.41	-0.8380
2.04	-0.8833	3.17	-0.8666	23.64	-0.7096
3.17	-0.9667	4.55	-0.8622	53.16	-0.5103
4.55	-0.9776	6.76	-0.9079	100.00	-0.2168
6.76	-1.0085	9.41	-0.9328		
9.41	-1.0009	13.37	-0.8480		
13.37	-0.9681	18.08	-0.8450		
18.08	-0.9429	23.64	-0.8127		
23.64	-0.9419	31.47	-0.7844		
31.47	-0.8820	41.05	-0.6998		
41.05	-0.8281	53.16	-0.6963		
53.16	-0.7923	70.31	-0.2766		
70.31	-0.3199	84.88	-0.3002		
84.88	-0.2226	100.00	-0.2095		
100.00	-0.1938	108.98	-0.1552		
108.98	-0.1362				

M = 0.842

mfr = 0.608 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6751	-16.79	0.5856	-6.39	0.8142
-6.39	0.9496	-3.01	1.0922	-3.01	1.0272
-3.01	1.1398	-1.63	1.1674	-1.63	1.1625
-1.63	1.1881	-0.70	1.1774	-0.70	1.1874
-0.70	1.1431	-0.18	1.0221	-0.18	1.0926
-0.18	0.9248	0.00	0.6227	0.00	0.7728
0.00	0.4815	0.13	0.1803	0.52	-0.0981
0.13	-0.1179	0.52	-0.3580	2.04	-0.5574
0.52	-0.6120	1.15	-0.6027	4.55	-0.6834
1.15	-0.8129	2.04	-0.7886	9.41	-0.6733
2.04	-0.9215	3.17	-0.8519	23.64	-0.6369
3.17	-1.0585	4.55	-0.8920	53.16	-0.4699
4.55	-1.0843	6.76	-0.8850	100.00	-0.2194
6.76	-1.1055	9.41	-0.8861		
9.41	-1.0989	13.37	-0.8474		
13.37	-1.0612	18.08	-0.8489		
18.08	-1.0231	23.64	-0.7878		
23.64	-0.9950	31.47	-0.7601		
31.47	-0.9565	41.05	-0.7326		
41.05	-0.8976	53.16	-0.6287		
53.16	-0.8831	70.31	-0.3335		
70.31	-0.3979	84.88	-0.3312		
84.88	-0.2037	100.00	-0.2075		
100.00	-0.1487	108.98	-0.1636		
108.98	-0.1100				

M = 0.843

mfr = 0.609 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6986	-16.79	0.5891	-6.39	0.7563
-6.39	0.9827	-3.01	1.0843	-3.01	0.9891
-3.01	1.1518	-1.63	1.1711	-1.63	1.1397
-1.63	1.1909	-0.70	1.1808	-0.70	1.1893
-0.70	1.1193	-0.18	1.0165	-0.18	1.1209
-0.18	0.8697	0.00	0.6257	0.00	0.8284
0.00	0.4122	0.13	0.1791	0.52	0.0013
0.13	-0.2208	0.52	-0.3745	2.04	-0.4208
0.52	-0.7075	1.15	-0.5934	4.55	-0.5363
1.15	-0.8836	2.04	-0.7589	9.41	-0.5266
2.04	-1.0428	3.17	-0.8461	23.64	-0.4587
3.17	-1.1069	4.55	-0.8895	53.16	-0.4631
4.55	-1.1392	6.76	-0.9077	100.00	-0.2201
6.76	-1.1445	9.41	-0.8795		
9.41	-1.1356	13.37	-0.8547		
13.37	-1.0984	18.08	-0.8187		
18.08	-1.0887	23.64	-0.7796		
23.64	-1.0524	31.47	-0.7650		
31.47	-1.0464	41.05	-0.7217		
41.05	-0.9764	53.16	-0.6482		
53.16	-0.9506	70.31	-0.5077		
70.31	-0.6026	84.88	-0.3195		
84.88	-0.2502	100.00	-0.2123		
100.00	-0.1276	108.98	-0.1582		
108.98	-0.0801				

Table 7. Continued

(g) Continued

M = 0.841

mfr = 0.644 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4924	-16.79	0.4945	-6.39	0.8091
-6.39	0.8145	-3.01	1.0395	-3.01	1.0179
-3.01	1.0571	-1.63	1.1565	-1.63	1.1593
-1.63	1.1560	-0.70	1.1883	-0.70	1.1752
-0.70	1.1826	-0.18	1.0770	-0.18	1.0629
-0.18	1.0397	0.00	0.7309	0.00	0.7346
0.00	0.6781	0.13	0.2721	0.52	-0.2155
0.13	0.1725	0.52	-0.2222	2.04	-0.7168
0.52	-0.2758	1.15	-0.5156	4.55	-0.8019
1.15	-0.5128	2.04	-0.6730	9.41	-0.8156
2.04	-0.6902	3.17	-0.7365	23.64	-0.7446
3.17	-0.8026	4.55	-0.7847	53.16	-0.5753
4.55	-0.8063	6.76	-0.8223	100.00	-0.2133
6.76	-0.8139	9.41	-0.8134		
9.41	-0.8393	13.37	-0.7903		
13.37	-0.7925	18.08	-0.7706		
18.08	-0.8165	23.64	-0.7123		
23.64	-0.7514	31.47	-0.7256		
31.47	-0.7247	41.05	-0.6900		
41.05	-0.7128	53.16	-0.6207		
53.16	-0.6126	70.31	-0.3100		
70.31	-0.2983	84.88	-0.3487		
84.88	-0.3247	100.00	-0.2302		
100.00	-0.2107	108.98	-0.1710		
108.98	-0.1581				

M = 0.843

mfr = 0.693 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3133	-16.79	0.3168	-6.39	0.6744
-6.39	0.6806	-3.01	0.9500	-3.01	0.9511
-3.01	0.9843	-1.63	1.1160	-1.63	1.1171
-1.63	1.1169	-0.70	1.1882	-0.70	1.1790
-0.70	1.1932	-0.18	1.1252	-0.18	1.1370
-0.18	1.1087	0.00	0.8357	0.00	0.8250
0.00	0.7887	0.13	0.4349	0.52	-0.0083
0.13	0.3130	0.52	-0.0604	2.04	-0.5245
0.52	-0.1329	1.15	-0.3265	4.55	-0.6695
1.15	-0.2732	2.04	-0.4971	9.41	-0.6677
2.04	-0.4735	3.17	-0.6122	23.64	-0.6595
3.17	-0.5904	4.55	-0.6507	53.16	-0.5082
4.55	-0.6293	6.76	-0.6965	100.00	-0.2177
6.76	-0.7043	9.41	-0.6932		
9.41	-0.7086	13.37	-0.6566		
13.37	-0.6988	18.08	-0.6740		
18.08	-0.6767	23.64	-0.6148		
23.64	-0.6658	31.47	-0.6578		
31.47	-0.6701	41.05	-0.6165		
41.05	-0.6164	53.16	-0.4624		
53.16	-0.5354	70.31	-0.3736		
70.31	-0.3526	84.88	-0.3717		
84.88	-0.3559	100.00	-0.2335		
100.00	-0.2127	108.98	-0.1633		
108.98	-0.1530				

M = 0.841

mfr = 0.693 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3442	-16.79	0.3169	-6.39	0.6377
-6.39	0.7237	-3.01	0.9592	-3.01	0.9054
-3.01	1.0088	-1.63	1.1024	-1.63	1.0912
-1.63	1.1369	-0.70	1.1885	-0.70	1.1797
-0.70	1.1891	-0.18	1.1268	-0.18	1.1538
-0.18	1.0712	0.00	0.8077	0.00	0.8879
0.00	0.7161	0.13	0.4316	0.52	0.1102
0.13	0.2230	0.52	-0.0829	2.04	-0.4266
0.52	-0.2502	1.15	-0.3468	4.55	-0.5547
1.15	-0.4064	2.04	-0.5209	9.41	-0.5569
2.04	-0.6373	3.17	-0.5985	23.64	-0.5424
3.17	-0.7589	4.55	-0.6207	53.16	-0.4281
4.55	-0.7506	6.76	-0.7057	100.00	-0.2155
6.76	-0.7757	9.41	-0.6767		
9.41	-0.7873	13.37	-0.6634		
13.37	-0.7740	18.08	-0.6856		
18.08	-0.7539	23.64	-0.6148		
23.64	-0.7364	31.47	-0.6251		
31.47	-0.7542	41.05	-0.5593		
41.05	-0.6399	53.16	-0.4830		
53.16	-0.5735	70.31	-0.3804		
70.31	-0.2915	84.88	-0.3645		
84.88	-0.3268	100.00	-0.2279		
100.00	-0.2119	108.98	-0.1656		
108.98	-0.1550				

M = 0.842

mfr = 0.693 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4136	-16.79	0.2991	-6.39	0.5615
-6.39	0.7710	-3.01	0.9618	-3.01	0.8408
-3.01	1.0462	-1.63	1.1070	-1.63	1.0511
-1.63	1.1590	-0.70	1.1870	-0.70	1.1689
-0.70	1.1842	-0.18	1.1188	-0.18	1.1682
-0.18	1.0380	0.00	0.8245	0.00	0.9566
0.00	0.6625	0.13	0.4273	0.52	0.2323
0.13	0.1384	0.52	-0.0823	2.04	-0.2202
0.52	-0.3542	1.15	-0.3242	4.55	-0.4102
1.15	-0.5405	2.04	-0.5088	9.41	-0.4905
2.04	-0.7704	3.17	-0.6121	23.64	-0.4257
3.17	-0.8469	4.55	-0.6569	53.16	-0.4272
4.55	-0.8343	6.76	-0.6829	100.00	-0.2190
6.76	-0.9029	9.41	-0.7136		
9.41	-0.8818	13.37	-0.6673		
13.37	-0.8896	18.08	-0.6710		
18.08	-0.8679	23.64	-0.5936		
23.64	-0.8600	31.47	-0.6356		
31.47	-0.7908	41.05	-0.5869		
41.05	-0.8231	53.16	-0.5459		
53.16	-0.7470	70.31	-0.3836		
70.31	-0.2692	84.88	-0.3546		
84.88	-0.2589	100.00	-0.2244		
100.00	-0.1947	108.98	-0.1672		
108.98	-0.1441				

M = 0.842

mfr = 0.693 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.4432	-16.79	0.3005	-6.39	0.5018
-6.39	0.8110	-3.01	0.9545	-3.01	0.7939
-3.01	1.0682	-1.63	1.1137	-1.63	1.0209
-1.63	1.1689	-0.70	1.1853	-0.70	1.1616
-0.70	1.1761	-0.18	1.1240	-0.18	1.1842
-0.18	0.9990	0.00	0.8378	0.00	1.0069
0.00	0.6272	0.13	0.4316	0.52	0.3525
0.13	0.0703	0.52	-0.0640	2.04	-0.1022
0.52	-0.4622	1.15	-0.3387	4.55	-0.3023
1.15	-0.6534	2.04	-0.4894	9.41	-0.3576
2.04	-0.8131	3.17	-0.6029	23.64	-0.3605
3.17	-0.9206	4.55	-0.6322	53.16	-0.3853
4.55	-0.9516	6.76	-0.6774	100.00	-0.2153
6.76	-0.9799	9.41	-0.6729		
9.41	-0.9697	13.37	-0.6633		
13.37	-0.9661	18.08	-0.6092		
18.08	-0.9483	23.64	-0.6148		
23.64	-0.9236	31.47	-0.6306		
31.47	-0.9015	41.05	-0.5838		
41.05	-0.8843	53.16	-0.5599		
53.16	-0.8477	70.31	-0.3982		
70.31	-0.3717	84.88	-0.3464		
84.88	-0.2128	100.00	-0.2239		
100.00	-0.1785	108.98	-0.1667		
108.98	-0.1230				

M = 0.842

mfr = 0.738 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.0879	-16.79	0.0686	-6.39	0.5200
-6.39	0.5125	-3.01	0.8632	-3.01	0.8471
-3.01	0.8809	-1.63	1.0314	-1.63	1.0463
-1.63	1.0553	-0.70	1.1768	-0.70	1.1668
-0.70	1.1869	-0.18	1.1569	-0.18	1.1591
-0.18	1.1417	0.00	0.9429	0.00	0.9440
0.00	0.8724	0.13	0.5585	0.52	0.2235
0.13	0.4418	0.52	0.1262	2.04	-0.3408
0.52	0.0263	1.15	-0.1234	4.55	-0.5252
1.15	-0.2034	2.04	-0.2949	9.41	-0.4977
2.04	-0.3674	3.17	-0.4311	23.64	-0.5252
3.17	-0.4221	4.55	-0.4707	53.16	-0.4189
4.55	-0.4446	6.76	-0.5688	100.00	-0.2064
6.76	-0.6053	9.41	-0.5144		
9.41	-0.5773	13.37	-0.5603		
13.37	-0.6096	18.08	-0.5659		
18.08	-0.5878	23.64	-0.5629		
23.64	-0.5351	31.47	-0.5599		
31.47	-0.5638	41.05	-0.5038		
41.05	-0.5526	53.16	-0.4640		
53.16	-0.4376	70.31	-0.3876		
70.31	-0.3832	84.88	-0.3613		
84.88	-0.3641	100.00	-0.2162		
100.00	-0.2179	108.98	-0.1610		
108.98	-0.1535				

Table 7. Continued

(g) Concluded

M = 0.845

mfr = 0.787 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.2548	-16.79	-0.2867	-6.39	0.3693
-6.39	0.3245	-3.01	0.7369	-3.01	0.7070
-3.01	0.7485	-1.63	0.9532	-1.63	1.0104
-1.63	0.9444	-0.70	1.1388	-0.70	1.1411
-0.70	1.1613	-0.18	1.1829	-0.18	1.1799
-0.18	1.1842	0.00	1.0091	0.00	1.0547
0.00	0.9789	0.13	0.6942	0.52	0.3133
0.13	0.6137	0.52	0.2861	2.04	-0.1436
0.52	0.2534	1.15	0.0231	4.55	-0.3693
1.15	0.0296	2.04	-0.1510	9.41	-0.4736
2.04	-0.1748	3.17	-0.3096	23.64	-0.4618
3.17	-0.2473	4.55	-0.3601	53.16	-0.4205
4.55	-0.3952	6.76	-0.3892	100.00	-0.2020
6.76	-0.3926	9.41	-0.4677		
9.41	-0.4776	13.37	-0.4883		
13.37	-0.4869	18.08	-0.4493		
18.08	-0.4632	23.64	-0.4530		
23.64	-0.4691	31.47	-0.4975		
31.47	-0.4858	41.05	-0.4737		
41.05	-0.4632	53.16	-0.4483		
53.16	-0.4507	70.31	-0.3710		
70.31	-0.4061	84.88	-0.3380		
84.88	-0.3555	100.00	-0.2076		
100.00	-0.2145	108.98	-0.1496		
108.98	-0.1521				

M = 0.842

mfr = 0.788 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.1897	-16.79	-0.2624	-6.39	0.3112
-6.39	0.3969	-3.01	0.7219	-3.01	0.6789
-3.01	0.7735	-1.63	0.9283	-1.63	0.9320
-1.63	0.9724	-0.70	1.1392	-0.70	1.1222
-0.70	1.1639	-0.18	1.1853	-0.18	1.1883
-0.18	1.1672	0.00	1.0050	0.00	1.0626
0.00	0.9485	0.13	0.7282	0.52	0.4380
0.13	0.5165	0.52	0.3197	2.04	-0.0408
0.52	0.1346	1.15	-0.0017	4.55	-0.2590
1.15	-0.0741	2.04	-0.1429	9.41	-0.4382
2.04	-0.2756	3.17	-0.2879	23.64	-0.4038
3.17	-0.3840	4.55	-0.3315	53.16	-0.4041
4.55	-0.4735	6.76	-0.4182	100.00	-0.2054
6.76	-0.4854	9.41	-0.4333		
9.41	-0.5190	13.37	-0.4163		
13.37	-0.5491	18.08	-0.4596		
18.08	-0.5825	23.64	-0.4574		
23.64	-0.5700	31.47	-0.4862		
31.47	-0.5716	41.05	-0.4148		
41.05	-0.5354	53.16	-0.4244		
53.16	-0.4337	70.31	-0.3542		
70.31	-0.3836	84.88	-0.3577		
84.88	-0.3461	100.00	-0.2076		
100.00	-0.2055	108.98	-0.1462		
108.98	-0.1492				

M = 0.843

mfr = 0.787 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.1318	-16.79	-0.2643	-6.39	0.2060
-6.39	0.4427	-3.01	0.7042	-3.01	0.5986
-3.01	0.8379	-1.63	0.9583	-1.63	0.8989
-1.63	1.0339	-0.70	1.1303	-0.70	1.0766
-0.70	1.1831	-0.18	1.1822	-0.18	1.1874
-0.18	1.1540	0.00	1.0043	0.00	1.1181
0.00	0.8641	0.13	0.7344	0.52	0.5694
0.13	0.4509	0.52	0.3201	2.04	0.0520
0.52	0.0211	1.15	0.0590	4.55	-0.1557
1.15	-0.2268	2.04	-0.1509	9.41	-0.2329
2.04	-0.4160	3.17	-0.2791	23.64	-0.3168
3.17	-0.5226	4.55	-0.3356	53.16	-0.3690
4.55	-0.5633	6.76	-0.3959	100.00	-0.1963
6.76	-0.6261	9.41	-0.4366		
9.41	-0.6797	13.37	-0.4554		
13.37	-0.6317	18.08	-0.4573		
18.08	-0.6929	23.64	-0.4425		
23.64	-0.6531	31.47	-0.4888		
31.47	-0.6817	41.05	-0.4429		
41.05	-0.6314	53.16	-0.4460		
53.16	-0.4989	70.31	-0.3597		
70.31	-0.3206	84.88	-0.3435		
84.88	-0.3522	100.00	-0.2109		
100.00	-0.2074	108.98	-0.1519		
108.98	-0.1459				

M = 0.843

mfr = 0.787 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	-0.0760	-16.79	-0.2992	-6.39	0.1632
-6.39	0.5241	-3.01	0.7218	-3.01	0.5440
-3.01	0.8818	-1.63	0.9469	-1.63	0.8347
-1.63	1.0562	-0.70	1.1330	-0.70	1.0586
-0.70	1.1849	-0.18	1.1820	-0.18	1.1856
-0.18	1.1270	0.00	1.0055	0.00	1.1407
0.00	0.8324	0.13	0.7100	0.52	0.6709
0.13	0.3614	0.52	0.2748	2.04	0.1610
0.52	-0.0743	1.15	0.0082	4.55	-0.0338
1.15	-0.3034	2.04	-0.1266	9.41	-0.1296
2.04	-0.5187	3.17	-0.2072	23.64	-0.2767
3.17	-0.6262	4.55	-0.3240	53.16	-0.3425
4.55	-0.6664	6.76	-0.3899	100.00	-0.1961
6.76	-0.7002	9.41	-0.4531		
9.41	-0.7556	13.37	-0.4383		
13.37	-0.7289	18.08	-0.4609		
18.08	-0.7319	23.64	-0.4361		
23.64	-0.7428	31.47	-0.4663		
31.47	-0.7549	41.05	-0.4420		
41.05	-0.7329	53.16	-0.4489		
53.16	-0.6404	70.31	-0.3683		
70.31	-0.2965	84.88	-0.3513		
84.88	-0.2942	100.00	-0.2175		
100.00	-0.2030	108.98	-0.1547		
108.98	-0.1451				

Table 7. Continued

(h) M = 0.87

M = 0.866

mfr = 0.519 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8403	-16.79	0.8381	-6.39	1.0434
-6.39	1.0469	-3.01	1.1742	-3.01	1.1648
-3.01	1.1798	-1.63	1.2007	-1.63	1.1841
-1.63	1.2031	-0.70	1.1336	-0.70	1.1222
-0.70	1.1188	-0.18	0.9060	-0.18	0.8920
-0.18	0.8812	0.00	0.4311	0.00	0.4685
0.00	0.3920	0.13	-0.0565	0.52	-0.6132
0.13	-0.1665	0.52	-0.6294	2.04	-0.9649
0.52	-0.6726	1.15	-0.8336	4.55	-1.0688
1.15	-0.8581	2.04	-0.9649	9.41	-1.0285
2.04	-0.9564	3.17	-1.0350	23.64	-0.9072
3.17	-1.0388	4.55	-1.0429	53.16	-0.8185
4.55	-1.0540	6.76	-1.0645	100.00	-0.2549
6.76	-1.0723	9.41	-1.0238		
9.41	-1.0318	13.37	-0.9852		
13.37	-1.0140	18.08	-0.9736		
18.08	-0.9625	23.64	-0.9061		
23.64	-0.9037	31.47	-0.8887		
31.47	-0.8809	41.05	-0.8518		
41.05	-0.8433	53.16	-0.8239		
53.16	-0.7990	70.31	-0.7622		
70.31	-0.7775	84.88	-0.7735		
84.88	-0.7749	100.00	-0.2745		
100.00	-0.2361	108.98	-0.1590		
108.98	-0.1691				

M = 0.867

mfr = 0.560 and α = 0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7590	-16.79	0.7460	-6.39	0.9895
-6.39	0.9852	-3.01	1.1474	-3.01	1.1449
-3.01	1.1585	-1.63	1.1994	-1.63	1.2006
-1.63	1.2015	-0.70	1.1703	-0.70	1.1584
-0.70	1.1550	-0.18	0.9698	-0.18	0.9755
-0.18	0.9396	0.00	0.5463	0.00	0.5785
0.00	0.5184	0.13	0.0471	0.52	-0.3976
0.13	-0.0499	0.52	-0.4721	2.04	-0.8313
0.52	-0.5515	1.15	-0.7021	4.55	-0.9551
1.15	-0.7155	2.04	-0.8475	9.41	-0.9422
2.04	-0.8472	3.17	-0.9177	23.64	-0.8400
3.17	-0.9212	4.55	-0.9433	53.16	-0.7461
4.55	-0.9763	6.76	-0.9584	100.00	-0.1961
6.76	-0.9519	9.41	-0.9429		
9.41	-0.9381	13.37	-0.9184		
13.37	-0.9080	18.08	-0.8842		
18.08	-0.9039	23.64	-0.8324		
23.64	-0.8530	31.47	-0.8201		
31.47	-0.8238	41.05	-0.7840		
41.05	-0.8123	53.16	-0.7548		
53.16	-0.7655	70.31	-0.7007		
70.31	-0.7399	84.88	-0.7014		
84.88	-0.7284	100.00	-0.2100		
100.00	-0.2024	108.98	-0.1015		
108.98	-0.1088				

M = 0.866

mfr = 0.606 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6242	-16.79	0.6182	-6.39	0.8794
-6.39	0.9113	-3.01	1.0927	-3.01	1.0922
-3.01	1.1044	-1.63	1.1813	-1.63	1.1929
-1.63	1.1924	-0.70	1.1939	-0.70	1.1906
-0.70	1.1831	-0.18	1.0437	-0.18	1.0513
-0.18	1.0179	0.00	0.6714	0.00	0.6940
0.00	0.6064	0.13	0.2017	0.52	-0.2466
0.13	0.0919	0.52	-0.3064	2.04	-0.7208
0.52	-0.3512	1.15	-0.5489	4.55	-0.7846
1.15	-0.5773	2.04	-0.6941	9.41	-0.8513
2.04	-0.7422	3.17	-0.7922	23.64	-0.7186
3.17	-0.8153	4.55	-0.8192	53.16	-0.6984
4.55	-0.8438	6.76	-0.8419	100.00	-0.1482
6.76	-0.8647	9.41	-0.8351		
9.41	-0.8611	13.37	-0.8142		
13.37	-0.8322	18.08	-0.7951		
18.08	-0.7893	23.64	-0.7490		
23.64	-0.7877	31.47	-0.7540		
31.47	-0.7627	41.05	-0.7126		
41.05	-0.7364	53.16	-0.6893		
53.16	-0.7136	70.31	-0.6513		
70.31	-0.6601	84.88	-0.5751		
84.88	-0.6074	100.00	-0.1458		
100.00	-0.1396	108.98	-0.0951		
108.98	-0.0879				

M = 0.866

mfr = 0.644 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5209	-16.79	0.5125	-6.39	0.8300
-6.39	0.8272	-3.01	1.0530	-3.01	1.0540
-3.01	1.0574	-1.63	1.1627	-1.63	1.1745
-1.63	1.1666	-0.70	1.2014	-0.70	1.1929
-0.70	1.2004	-0.18	1.0968	-0.18	1.0971
-0.18	1.0676	0.00	0.7304	0.00	0.7576
0.00	0.6995	0.13	0.3196	0.52	-0.1422
0.13	0.1799	0.52	-0.1652	2.04	-0.6030
0.52	-0.2549	1.15	-0.4404	4.55	-0.7329
1.15	-0.4633	2.04	-0.6220	9.41	-0.7753
2.04	-0.6580	3.17	-0.6770	23.64	-0.7296
3.17	-0.7127	4.55	-0.7213	53.16	-0.6763
4.55	-0.7380	6.76	-0.7613	100.00	-0.1480
6.76	-0.7534	9.41	-0.7642		
9.41	-0.7575	13.37	-0.7224		
13.37	-0.7386	18.08	-0.7422		
18.08	-0.7326	23.64	-0.6731		
23.64	-0.6820	31.47	-0.6878		
31.47	-0.6986	41.05	-0.6814		
41.05	-0.6750	53.16	-0.6563		
53.16	-0.6548	70.31	-0.6117		
70.31	-0.6368	84.88	-0.5786		
84.88	-0.5142	100.00	-0.1599		
100.00	-0.1336	108.98	-0.1126		
108.98	-0.1002				

M = 0.869

mfr = 0.694 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.3207	-16.79	0.3174	-6.39	0.7118
-6.39	0.7247	-3.01	0.9865	-3.01	0.9667
-3.01	0.9760	-1.63	1.1100	-1.63	1.1437
-1.63	1.1151	-0.70	1.2020	-0.70	1.1979
-0.70	1.2041	-0.18	1.1474	-0.18	1.1432
-0.18	1.1341	0.00	0.8535	0.00	0.8752
0.00	0.8191	0.13	0.4797	0.52	0.0631
0.13	0.3302	0.52	-0.0026	2.04	-0.4740
0.52	-0.0707	1.15	-0.2731	4.55	-0.5656
1.15	-0.2629	2.04	-0.4178	9.41	-0.6712
2.04	-0.4425	3.17	-0.5187	23.64	-0.6483
3.17	-0.5451	4.55	-0.5502	53.16	-0.5925
4.55	-0.6075	6.76	-0.6111	100.00	-0.1629
6.76	-0.6257	9.41	-0.6240		
9.41	-0.6589	13.37	-0.6508		
13.37	-0.6293	18.08	-0.6122		
18.08	-0.6455	23.64	-0.6161		
23.64	-0.6104	31.47	-0.6082		
31.47	-0.6439	41.05	-0.5742		
41.05	-0.6209	53.16	-0.5831		
53.16	-0.6005	70.31	-0.5514		
70.31	-0.5772	84.88	-0.5611		
84.88	-0.5241	100.00	-0.1605		
100.00	-0.1602	108.98	-0.1157		
108.98	-0.1058				

M = 0.866

mfr = 0.741 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.0742	-16.79	0.1003	-6.39	0.5345
-6.39	0.5376	-3.01	0.8630	-3.01	0.8624
-3.01	0.8931	-1.63	1.0576	-1.63	1.0593
-1.63	1.0662	-0.70	1.1916	-0.70	1.1802
-0.70	1.1939	-0.18	1.1795	-0.18	1.1816
-0.18	1.1596	0.00	0.9349	0.00	0.9685
0.00	0.9344	0.13	0.6170	0.52	0.2297
0.13	0.5421	0.52	0.1836	2.04	-0.3167
0.52	0.0863	1.15	-0.0848	4.55	-0.4567
1.15	-0.0899	2.04	-0.2762	9.41	-0.4725
2.04	-0.3077	3.17	-0.3224	23.64	-0.5349
3.17	-0.4151	4.55	-0.4617	53.16	-0.5392
4.55	-0.4920	6.76	-0.5098	100.00	-0.1743
6.76	-0.5335	9.41	-0.5288		
9.41	-0.5067	13.37	-0.5335		
13.37	-0.5482	18.08	-0.5629		
18.08	-0.5572	23.64	-0.5026		
23.64	-0.5383	31.47	-0.5119		
31.47	-0.5747	41.05	-0.5661		
41.05	-0.5718	53.16	-0.5444		
53.16	-0.5485	70.31	-0.5306		
70.31	-0.5064	84.88	-0.5160		
84.88	-0.5201	100.00	-0.1824		
100.00	-0.1758	108.98	-0.1349		
108.98	-0.1203				

Table 7. Continued

(h) Concluded

M = 0.867

mfr = 0.792 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2478	-16.79	-0.2556	-6.39	0.3587
-6.39	0.3391	-3.01	0.7296	-3.01	0.7133
-3.01	0.7500	-1.63	0.9644	-1.63	1.0107
-1.63	0.9843	-0.70	1.1550	-0.70	1.1579
-0.70	1.1736	-0.18	1.1968	-0.18	1.1968
-0.18	1.1976	0.00	1.0297	0.00	1.0494
0.00	1.0103	0.13	0.7507	0.52	0.3702
0.13	0.6159	0.52	0.3334	2.04	-0.1030
0.52	0.2272	1.15	0.0840	4.55	-0.3455
1.15	0.0532	2.04	-0.1048	9.41	-0.4422
2.04	-0.1579	3.17	-0.2434	23.64	-0.4490
3.17	-0.2433	4.55	-0.3236	53.16	-0.4802
4.55	-0.3026	6.76	-0.3229	100.00	-0.1761
6.76	-0.3172	9.41	-0.4138		
9.41	-0.4346	13.37	-0.4249		
13.37	-0.4249	18.08	-0.4271		
18.08	-0.4843	23.64	-0.4519		
23.64	-0.4706	31.47	-0.4894		
31.47	-0.4738	41.05	-0.4845		
41.05	-0.4916	53.16	-0.4830		
53.16	-0.5006	70.31	-0.4801		
70.31	-0.4907	84.88	-0.4340		
84.88	-0.4483	100.00	-0.1838		
100.00	-0.1818	108.98	-0.1266		
108.98	-0.1279				

Table 7. Continued

(i) M = 0.89

M = 0.891

mfr = 0.285 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.1581	-16.79	1.1556	-6.39	1.2161
-6.39	1.2163	-3.01	1.1793	-3.01	1.1780
-3.01	1.1757	-1.63	1.0746	-1.63	1.0384
-1.63	1.0700	-0.70	0.8519	-0.70	0.8399
-0.70	0.8170	-0.18	0.4913	-0.18	0.4868
-0.18	0.4418	0.00	-0.0314	0.00	0.0074
0.00	-0.0606	0.13	-0.6115	0.52	-1.0603
0.13	-0.6760	0.52	-1.0883	2.04	-1.3234
0.52	-1.1227	1.15	-1.2390	4.55	-1.3412
1.15	-1.2418	2.04	-1.3181	9.41	-1.2996
2.04	-1.3259	3.17	-1.3584	23.64	-1.1447
3.17	-1.3622	4.55	-1.3563	53.16	-0.9409
4.55	-1.3600	6.76	-1.3335	100.00	-0.8567
6.76	-1.3294	9.41	-1.2915		
9.41	-1.3125	13.37	-1.2390		
13.37	-1.2561	18.08	-1.1811		
18.08	-1.1910	23.64	-1.1314		
23.64	-1.0853	31.47	-1.0556		
31.47	-1.0731	41.05	-0.9972		
41.05	-0.9943	53.16	-0.9302		
53.16	-0.9341	70.31	-0.8565		
70.31	-0.8687	84.88	-0.8554		
84.88	-0.8565	100.00	-0.8433		
100.00	-0.8496	108.98	-0.8064		
108.98	-0.8112				

M = 0.891

mfr = 0.386 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	1.0680	-16.79	1.0638	-6.39	1.1893
-6.39	1.1858	-3.01	1.2146	-3.01	1.2149
-3.01	1.2143	-1.63	1.1629	-1.63	1.1471
-1.63	1.1619	-0.70	1.0035	-0.70	0.9832
-0.70	0.9793	-0.18	0.7034	-0.18	0.6884
-0.18	0.6419	0.00	0.1694	0.00	0.2214
0.00	0.1603	0.13	-0.3803	0.52	-0.8749
0.13	-0.4776	0.52	-0.9099	2.04	-1.1732
0.52	-0.9444	1.15	-1.1011	4.55	-1.1998
1.15	-1.0952	2.04	-1.1676	9.41	-1.1410
2.04	-1.1482	3.17	-1.1953	23.64	-1.0080
3.17	-1.1980	4.55	-1.1977	53.16	-0.8690
4.55	-1.2052	6.76	-1.1949	100.00	-0.8056
6.76	-1.1859	9.41	-1.1588		
9.41	-1.1659	13.37	-1.1242		
13.37	-1.1165	18.08	-1.0661		
18.08	-1.0805	23.64	-1.0146		
23.64	-0.9911	31.47	-0.9540		
31.47	-0.9681	41.05	-0.9058		
41.05	-0.8905	53.16	-0.8726		
53.16	-0.8734	70.31	-0.8167		
70.31	-0.8323	84.88	-0.8087		
84.88	-0.8135	100.00	-0.7992		
100.00	-0.8216	108.98	-0.7700		
108.98	-0.7730				

M = 0.890

mfr = 0.515 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.8669	-16.79	0.8587	-6.39	1.0711
-6.39	1.0697	-3.01	1.1892	-3.01	1.1876
-3.01	1.1986	-1.63	1.2126	-1.63	1.2096
-1.63	1.2126	-0.70	1.1543	-0.70	1.1422
-0.70	1.1345	-0.18	0.9226	-0.18	0.9194
-0.18	0.8722	0.00	0.4685	0.00	0.5028
0.00	0.4373	0.13	0.0051	0.52	-0.5223
0.13	-0.1496	0.52	-0.5836	2.04	-0.8914
0.52	-0.6237	1.15	-0.7650	4.55	-0.9871
1.15	-0.7804	2.04	-0.9082	9.41	-0.9530
2.04	-0.9198	3.17	-0.9593	23.64	-0.8701
3.17	-0.9506	4.55	-0.9657	53.16	-0.7633
4.55	-0.9784	6.76	-0.9822	100.00	-0.7325
6.76	-0.9668	9.41	-0.9639		
9.41	-0.9671	13.37	-0.9191		
13.37	-0.9156	18.08	-0.8984		
18.08	-0.8892	23.64	-0.8497		
23.64	-0.8606	31.47	-0.8372		
31.47	-0.8618	41.05	-0.7901		
41.05	-0.7920	53.16	-0.7569		
53.16	-0.7670	70.31	-0.7236		
70.31	-0.7374	84.88	-0.7331		
84.88	-0.7430	100.00	-0.7277		
100.00	-0.7474	108.98	-0.6915		
108.98	-0.6969				

M = 0.892

mfr = 0.559 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.7713	-16.79	0.7647	-6.39	1.0083
-6.39	1.0060	-3.01	1.1626	-3.01	1.1522
-3.01	1.1591	-1.63	1.2106	-1.63	1.2125
-1.63	1.2135	-0.70	1.1828	-0.70	1.1759
-0.70	1.1634	-0.18	0.9878	-0.18	0.9781
-0.18	0.9696	0.00	0.5858	0.00	0.6331
0.00	0.5400	0.13	0.0944	0.52	-0.4134
0.13	-0.0004	0.52	-0.4323	2.04	-0.7875
0.52	-0.4690	1.15	-0.6244	4.55	-0.8934
1.15	-0.6543	2.04	-0.7628	9.41	-0.9185
2.04	-0.8038	3.17	-0.8448	23.64	-0.7984
3.17	-0.8517	4.55	-0.8584	53.16	-0.7048
4.55	-0.8958	6.76	-0.8836	100.00	-0.7132
6.76	-0.9409	9.41	-0.8564		
9.41	-0.8961	13.37	-0.8588		
13.37	-0.8990	18.08	-0.8176		
18.08	-0.8312	23.64	-0.7788		
23.64	-0.8066	31.47	-0.7709		
31.47	-0.7861	41.05	-0.7236		
41.05	-0.7364	53.16	-0.7243		
53.16	-0.7416	70.31	-0.6613		
70.31	-0.7062	84.88	-0.6952		
84.88	-0.7115	100.00	-0.7057		
100.00	-0.7071	108.98	-0.6602		
108.98	-0.6599				

M = 0.891

mfr = 0.611 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.6393	-16.79	0.6283	-6.39	0.9160
-6.39	0.9198	-3.01	1.1120	-3.01	1.1085
-3.01	1.1264	-1.63	1.1973	-1.63	1.2038
-1.63	1.1995	-0.70	1.2032	-0.70	1.1983
-0.70	1.2007	-0.18	1.0580	-0.18	1.0656
-0.18	1.0275	0.00	0.6942	0.00	0.7008
0.00	0.6687	0.13	0.2662	0.52	-0.1753
0.13	0.1404	0.52	-0.2512	2.04	-0.6551
0.52	-0.2920	1.15	-0.4766	4.55	-0.7484
1.15	-0.4873	2.04	-0.6593	9.41	-0.7523
2.04	-0.6786	3.17	-0.7030	23.64	-0.7142
3.17	-0.7320	4.55	-0.7571	53.16	-0.6737
4.55	-0.7728	6.76	-0.7830	100.00	-0.6733
6.76	-0.7865	9.41	-0.7683		
9.41	-0.8018	13.37	-0.7446		
13.37	-0.7638	18.08	-0.7344		
18.08	-0.7625	23.64	-0.7348		
23.64	-0.7221	31.47	-0.6962		
31.47	-0.7038	41.05	-0.6787		
41.05	-0.6727	53.16	-0.6649		
53.16	-0.6885	70.31	-0.6394		
70.31	-0.6605	84.88	-0.6620		
84.88	-0.6839	100.00	-0.6700		
100.00	-0.6851	108.98	-0.4976		
108.98	-0.5172				

M = 0.890

mfr = 0.646 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-16.79	0.5262	-16.79	0.5309	-6.39	0.8392
-6.39	0.8282	-3.01	1.0690	-3.01	1.0586
-3.01	1.0754	-1.63	1.1738	-1.63	1.1867
-1.63	1.1796	-0.70	1.2117	-0.70	1.1999
-0.70	1.2126	-0.18	1.1126	-0.18	1.1008
-0.18	1.1017	0.00	0.7441	0.00	0.7726
0.00	0.7333	0.13	0.3725	0.52	-0.0745
0.13	0.2246	0.52	-0.1294	2.04	-0.5878
0.52	-0.1809	1.15	-0.3661	4.55	-0.7013
1.15	-0.3776	2.04	-0.5155	9.41	-0.7156
2.04	-0.5765	3.17	-0.6052	23.64	-0.6720
3.17	-0.6380	4.55	-0.6545	53.16	-0.6675
4.55	-0.6436	6.76	-0.6933	100.00	-0.6703
6.76	-0.6716	9.41	-0.6758		
9.41	-0.6940	13.37	-0.6786		
13.37	-0.6696	18.08	-0.6839		
18.08	-0.6937	23.64	-0.6538		
23.64	-0.6228	31.47	-0.6488		
31.47	-0.6676	41.05	-0.6426		
41.05	-0.6542	53.16	-0.6401		
53.16	-0.6384	70.31	-0.6033		
70.31	-0.6349	84.88	-0.6532		
84.88	-0.6405	100.00	-0.6597		
100.00	-0.6433	108.98	-0.5075		
108.98	-0.4416				

Table 7. Concluded

(i) Concluded

M = 0.890

mfr = 0.695 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	0.3513	-16.79	0.3404	-6.39	0.7163
-6.39	0.7152	-3.01	0.9870	-3.01	0.9797
-3.01	0.9934	-1.63	1.1285	-1.63	1.1551
-1.63	1.1357	-0.70	1.2133	-0.70	1.2076
-0.70	1.2182	-0.18	1.1504	-0.18	1.1612
-0.18	1.1468	0.00	0.8880	0.00	0.9067
0.00	0.8575	0.13	0.4941	0.52	0.0881
0.13	0.3828	0.52	0.0555	2.04	-0.3984
0.52	-0.0583	1.15	-0.2153	4.55	-0.5501
1.15	-0.1916	2.04	-0.3817	9.41	-0.6091
2.04	-0.3766	3.17	-0.4888	23.64	-0.5864
3.17	-0.4924	4.55	-0.5285	53.16	-0.5861
4.55	-0.5225	6.76	-0.5679	100.00	-0.6255
6.76	-0.5728	9.41	-0.5948		
9.41	-0.6048	13.37	-0.5889		
13.37	-0.5892	18.08	-0.5582		
18.08	-0.6166	23.64	-0.5704		
23.64	-0.5850	31.47	-0.6061		
31.47	-0.5893	41.05	-0.5759		
41.05	-0.6005	53.16	-0.5755		
53.16	-0.5799	70.31	-0.5679		
70.31	-0.5983	84.88	-0.6039		
84.88	-0.6135	100.00	-0.6213		
100.00	-0.6188	108.98	-0.4198		
108.98	-0.2822				

M = 0.892

mfr = 0.743 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	0.0770	-16.79	0.1113	-6.39	0.5556
-6.39	0.5534	-3.01	0.8747	-3.01	0.8601
-3.01	0.9236	-1.63	1.0470	-1.63	1.0892
-1.63	1.0783	-0.70	1.2024	-0.70	1.1930
-0.70	1.2091	-0.18	1.1954	-0.18	1.1934
-0.18	1.1842	0.00	0.9773	0.00	0.9825
0.00	0.9594	0.13	0.6414	0.52	0.2354
0.13	0.5248	0.52	0.2111	2.04	-0.2636
0.52	0.1728	1.15	-0.0527	4.55	-0.3864
1.15	-0.0300	2.04	-0.1999	9.41	-0.3885
2.04	-0.2771	3.17	-0.3050	23.64	-0.4984
3.17	-0.3629	4.55	-0.3937	53.16	-0.5297
4.55	-0.3964	6.76	-0.4609	100.00	-0.5924
6.76	-0.4824	9.41	-0.4511		
9.41	-0.5032	13.37	-0.4765		
13.37	-0.4971	18.08	-0.4918		
18.08	-0.5087	23.64	-0.5030		
23.64	-0.5574	31.47	-0.5046		
31.47	-0.5338	41.05	-0.5322		
41.05	-0.5413	53.16	-0.5430		
53.16	-0.5069	70.31	-0.5198		
70.31	-0.5462	84.88	-0.5855		
84.88	-0.5750	100.00	-0.5920		
100.00	-0.5989	108.98	-0.4861		
108.98	-0.2675				

M = 0.893

mfr = 0.791 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-16.79	-0.2155	-16.79	-0.2099	-6.39	0.4041
-6.39	0.3825	-3.01	0.7557	-3.01	0.7708
-3.01	0.7468	-1.63	0.9796	-1.63	1.0293
-1.63	0.9823	-0.70	1.1686	-0.70	1.1662
-0.70	1.1738	-0.18	1.2105	-0.18	1.2108
-0.18	1.2113	0.00	1.0558	0.00	1.0769
0.00	1.0149	0.13	0.7682	0.52	0.4190
0.13	0.6844	0.52	0.3523	2.04	-0.0633
0.52	0.3109	1.15	0.1111	4.55	-0.2772
1.15	0.0721	2.04	-0.0793	9.41	-0.3842
2.04	-0.0864	3.17	-0.1755	23.64	-0.4374
3.17	-0.1732	4.55	-0.3012	53.16	-0.5044
4.55	-0.2566	6.76	-0.3262	100.00	-0.5523
6.76	-0.2832	9.41	-0.3522		
9.41	-0.3865	13.37	-0.4072		
13.37	-0.3863	18.08	-0.4019		
18.08	-0.4733	23.64	-0.4033		
23.64	-0.4337	31.47	-0.4505		
31.47	-0.4822	41.05	-0.4795		
41.05	-0.4699	53.16	-0.4900		
53.16	-0.4822	70.31	-0.4827		
70.31	-0.5051	84.88	-0.5472		
84.88	-0.5660	100.00	-0.5588		
100.00	-0.5651	108.98	-0.2045		
108.98	-0.2897				

Table 8. Pressure coefficients on cowl E

(a) M = 0.60

M = 0.594

mfr = 0.275 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.0549	-15.26	1.0544	-6.25	1.0895
-6.25	1.0899	-3.00	1.0199	-3.00	0.9906
-3.00	0.9950	-1.62	0.8452	-1.62	0.8544
-1.62	0.8172	-0.71	0.5682	-0.71	0.5068
-0.71	0.5027	-0.17	0.1402	-0.17	-0.0093
-0.17	0.0225	0.00	-0.7135	0.00	-0.6921
0.00	-0.6587	0.12	-1.1358	0.50	-1.8326
0.12	-1.1670	0.50	-1.4283	2.00	-1.3716
0.50	-1.1914	1.12	-0.8685	4.46	-1.0008
1.12	-1.4352	2.00	-0.8895	9.22	-1.3931
2.00	-1.2159	3.11	-0.8411	23.47	-1.2465
3.11	-1.3501	4.46	-0.9008	53.33	-0.7124
4.46	-1.3809	6.62	-0.8877	100.00	-0.3311
6.62	-1.4362	9.22	-0.8441		
9.22	-1.2781	13.18	-0.8889		
13.18	-1.4026	17.92	-0.9068		
17.92	-1.2723	23.47	-0.9074		
23.47	-1.1994	31.39	-0.9237		
31.39	-1.0541	41.06	-0.9912		
41.06	-0.9913	53.33	-0.9282		
53.33	-0.7269	70.92	-0.7864		
70.92	-0.6233	86.46	-0.5488		
86.46	-0.4306	100.00	-0.4331		
100.00	-0.3417	109.85	-0.2848		
109.85	-0.2797				

M = 0.597

mfr = 0.431 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8874	-15.26	0.8816	-6.25	0.9724
-6.25	1.0489	-3.00	1.0954	-3.00	1.0949
-3.00	1.0915	-1.62	1.0279	-1.62	1.0388
-1.62	1.0104	-0.71	0.8277	-0.71	0.8344
-0.71	0.8005	-0.17	0.4914	-0.17	0.4002
-0.17	0.4098	0.00	-0.3169	0.00	-0.2244
0.00	-0.2730	0.12	-1.9246	0.50	-2.5218
0.12	-1.9833	0.50	-2.5266	2.00	-2.3495
0.50	-2.4541	1.12	-2.1136	4.46	-1.8485
1.12	-2.4498	2.00	-2.2312	9.22	-1.4159
2.00	-2.2980	3.11	-2.1670	23.47	-0.6525
3.11	-2.1017	4.46	-1.9122	53.33	-0.4080
4.46	-1.8817	6.62	-1.5871	100.00	-0.2393
6.62	-1.6148	9.22	-1.4130		
9.22	-1.4306	13.18	-1.0149		
13.18	-1.2691	17.92	-0.9435		
17.92	-0.9938	23.47	-0.6732		
23.47	-0.6843	31.39	-0.5379		
31.39	-0.5424	41.06	-0.4627		
41.06	-0.4719	53.33	-0.4031		
53.33	-0.4093	70.92	-0.3379		
70.92	-0.3446	86.46	-0.3017		
86.46	-0.2973	100.00	-0.2359		
100.00	-0.2362	109.85	-0.1987		
109.85	-0.1968				

M = 0.595

mfr = 0.491 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7930	-15.26	0.7795	-6.25	0.8970
-6.25	1.0020	-3.00	1.0874	-3.00	1.0882
-3.00	1.0887	-1.62	1.0695	-1.62	1.0695
-1.62	1.0638	-0.71	0.9314	-0.71	0.9295
-0.71	0.9046	-0.17	0.6253	-0.17	0.5389
-0.17	0.5968	0.00	-0.1233	0.00	-0.0399
0.00	-0.0242	0.12	-1.6951	0.50	-2.3190
0.12	-1.7747	0.50	-2.2885	2.00	-2.2215
0.50	-2.2534	1.12	-2.5036	4.46	-2.0458
1.12	-2.4964	2.00	-2.2873	9.22	-0.9559
2.00	-2.3246	3.11	-2.0673	23.47	-0.5918
3.11	-2.2087	4.46	-2.1272	53.33	-0.3959
4.46	-2.0656	6.62	-1.2301	100.00	-0.2345
6.62	-1.2557	9.22	-0.9888		
9.22	-0.9908	13.18	-0.8091		
13.18	-0.8079	17.92	-0.7072		
17.92	-0.7134	23.47	-0.6091		
23.47	-0.5702	31.39	-0.4993		
31.39	-0.5131	41.06	-0.4394		
41.06	-0.4511	53.33	-0.3937		
53.33	-0.3956	70.92	-0.3344		
70.92	-0.3349	86.46	-0.2988		
86.46	-0.2946	100.00	-0.2337		
100.00	-0.2343	109.85	-0.1856		
109.85	-0.1910				

M = 0.597

mfr = 0.544 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6893	-15.26	0.6652	-6.25	0.8054
-6.25	0.9275	-3.00	1.0682	-3.00	1.0687
-3.00	1.0752	-1.62	1.0896	-1.62	1.0935
-1.62	1.0862	-0.71	1.0079	-0.71	1.0146
-0.71	0.9763	-0.17	0.7665	-0.17	0.6759
-0.17	0.6977	0.00	0.0523	0.00	0.1943
0.00	0.1127	0.12	-1.3708	0.50	-2.0162
0.12	-1.4288	0.50	-2.0571	2.00	-1.8226
0.50	-1.9437	1.12	-2.1481	4.46	-1.7223
1.12	-2.0614	2.00	-1.9005	9.22	-0.8856
2.00	-2.0514	3.11	-1.8594	23.47	-0.5554
3.11	-1.7486	4.46	-1.5614	53.33	-0.3790
4.46	-1.7253	6.62	-0.9890	100.00	-0.2198
6.62	-0.9950	9.22	-0.8986		
9.22	-0.9728	13.18	-0.7458		
13.18	-0.7659	17.92	-0.6494		
17.92	-0.6835	23.47	-0.5506		
23.47	-0.5396	31.39	-0.4784		
31.39	-0.4897	41.06	-0.4183		
41.06	-0.4360	53.33	-0.3686		
53.33	-0.3782	70.92	-0.3172		
70.92	-0.3205	86.46	-0.2953		
86.46	-0.2794	100.00	-0.2252		
100.00	-0.2205	109.85	-0.1799		
109.85	-0.1801				

M = 0.596

mfr = 0.543 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7132	-15.26	0.6719	-6.25	0.7568
-6.25	0.9719	-3.00	1.0630	-3.00	1.0569
-3.00	1.0847	-1.62	1.0938	-1.62	1.0929
-1.62	1.0752	-0.71	0.9959	-0.71	1.0276
-0.71	0.9508	-0.17	0.7586	-0.17	0.7568
-0.17	0.6235	0.00	0.0965	0.00	0.3095
0.00	0.0512	0.12	-1.3676	0.50	-1.6493
0.12	-1.6782	0.50	-2.0035	2.00	-1.6350
0.50	-2.1148	1.12	-2.1429	4.46	-1.3361
1.12	-2.4423	2.00	-1.9601	9.22	-0.7904
2.00	-2.2923	3.11	-1.8231	23.47	-0.5016
3.11	-2.1836	4.46	-1.5641	53.33	-0.3568
4.46	-2.0936	6.62	-0.9842	100.00	-0.2096
6.62	-1.2760	9.22	-0.9187		
9.22	-0.9925	13.18	-0.7304		
13.18	-0.8141	17.92	-0.6509		
17.92	-0.7071	23.47	-0.5626		
23.47	-0.5770	31.39	-0.4794		
31.39	-0.5101	41.06	-0.4234		
41.06	-0.4553	53.33	-0.3679		
53.33	-0.3973	70.92	-0.3244		
70.92	-0.3362	86.46	-0.2896		
86.46	-0.2908	100.00	-0.2229		
100.00	-0.2319	109.85	-0.1706		
109.85	-0.1850				

M = 0.597

mfr = 0.546 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7348	-15.26	0.6678	-6.25	0.7132
-6.25	0.9904	-3.00	1.0641	-3.00	1.0289
-3.00	1.0888	-1.62	1.0890	-1.62	1.0891
-1.62	1.0604	-0.71	1.0036	-0.71	1.0556
-0.71	0.9005	-0.17	0.7520	-0.17	0.8573
-0.17	0.5369	0.00	0.0394	0.00	0.4623
0.00	-0.0503	0.12	-1.3682	0.50	-1.3438
0.12	-1.8057	0.50	-2.0279	2.00	-1.4038
0.50	-2.3187	1.12	-2.1320	4.46	-1.0769
1.12	-2.5320	2.00	-1.9418	9.22	-0.7072
2.00	-2.3330	3.11	-1.8312	23.47	-0.4533
3.11	-2.2854	4.46	-1.5394	53.33	-0.3342
4.46	-2.2411	6.62	-1.0110	100.00	-0.2004
6.62	-1.6205	9.22	-0.9070		
9.22	-1.2519	13.18	-0.7249		
13.18	-0.9141	17.92	-0.6516		
17.92	-0.7503	23.47	-0.5652		
23.47	-0.6115	31.39	-0.4799		
31.39	-0.5443	41.06	-0.4253		
41.06	-0.4843	53.33	-0.3748		
53.33	-0.4138	70.92	-0.3196		
70.92	-0.3470	86.46	-0.2879		
86.46	-0.2938	100.00	-0.2258		
100.00	-0.2328	109.85	-0.1803		
109.85	-0.1908				

Table 8. Continued

(a) Continued

M = 0.595

mfr = 0.546 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7796	-15.26	0.6672	-6.25	0.6605
-6.25	1.0120	-3.00	1.0626	-3.00	0.9973
-3.00	1.0938	-1.62	1.0894	-1.62	1.0796
-1.62	1.0437	-0.71	0.9966	-0.71	1.0771
-0.71	0.8684	-0.17	0.7647	-0.17	0.9235
-0.17	0.4780	0.00	0.0691	0.00	0.6101
0.00	-0.1600	0.12	-1.3827	0.50	-0.9848
0.12	-1.9606	0.50	-2.0003	2.00	-1.1388
0.50	-2.3800	1.12	-2.1465	4.46	-0.8684
1.12	-2.4629	2.00	-2.0033	9.22	-0.6377
2.00	-2.3301	3.11	-1.7808	23.47	-0.3982
3.11	-2.2410	4.46	-1.4860	53.33	-0.3085
4.46	-2.0360	6.62	-1.0075	100.00	-0.1884
6.62	-1.6988	9.22	-0.9060		
9.22	-1.5215	13.18	-0.7417		
13.18	-1.2562	17.92	-0.6609		
17.92	-0.9681	23.47	-0.5516		
23.47	-0.7139	31.39	-0.4768		
31.39	-0.5783	41.06	-0.4207		
41.06	-0.4918	53.33	-0.3763		
53.33	-0.4135	70.92	-0.3177		
70.92	-0.3534	86.46	-0.2897		
86.46	-0.2989	100.00	-0.2272		
100.00	-0.2351	109.85	-0.1805		
109.85	-0.1965				

M = 0.594

mfr = 0.599 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5516	-15.26	0.5353	-6.25	0.6907
-6.25	0.8404	-3.00	1.0135	-3.00	1.0238
-3.00	1.0300	-1.62	1.0906	-1.62	1.0884
-1.62	1.0917	-0.71	1.0643	-0.71	1.0620
-0.71	1.0523	-0.17	0.8897	-0.17	0.8109
-0.17	0.8202	0.00	0.3058	0.00	0.3888
0.00	0.3578	0.12	-1.0692	0.50	-1.5029
0.12	-1.1460	0.50	-1.6330	2.00	-1.5011
0.50	-1.4760	1.12	-1.7404	4.46	-1.2761
1.12	-1.6522	2.00	-1.6222	9.22	-0.7790
2.00	-1.5892	3.11	-1.4242	23.47	-0.5114
3.11	-1.3702	4.46	-1.2911	53.33	-0.3511
4.46	-1.2358	6.62	-0.9150	100.00	-0.2084
6.62	-0.8914	9.22	-0.7909		
9.22	-0.8802	13.18	-0.6577		
13.18	-0.6571	17.92	-0.5819		
17.92	-0.6299	23.47	-0.5072		
23.47	-0.4941	31.39	-0.4464		
31.39	-0.4431	41.06	-0.4011		
41.06	-0.4064	53.33	-0.3529		
53.33	-0.3570	70.92	-0.2996		
70.92	-0.3045	86.46	-0.2701		
86.46	-0.2705	100.00	-0.2081		
100.00	-0.2104	109.85	-0.1641		
109.85	-0.1669				

M = 0.595

mfr = 0.647 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3859	-15.26	0.3988	-6.25	0.5354
-6.25	0.7499	-3.00	0.9502	-3.00	0.9677
-3.00	0.9827	-1.62	1.0747	-1.62	1.0671
-1.62	1.0843	-0.71	1.0825	-0.71	1.0871
-0.71	1.0875	-0.17	0.9568	-0.17	0.9312
-0.17	0.9161	0.00	0.5160	0.00	0.5983
0.00	0.5838	0.12	-0.6792	0.50	-1.1317
0.12	-0.7461	0.50	-1.1269	2.00	-1.2704
0.50	-1.2362	1.12	-1.1550	4.46	-0.9757
1.12	-1.3926	2.00	-1.1287	9.22	-0.6744
2.00	-1.2367	3.11	-1.1209	23.47	-0.4542
3.11	-1.1957	4.46	-0.9255	53.33	-0.3381
4.46	-1.0175	6.62	-0.7989	100.00	-0.1945
6.62	-0.8765	9.22	-0.7351		
9.22	-0.7727	13.18	-0.5631		
13.18	-0.6274	17.92	-0.5381		
17.92	-0.5474	23.47	-0.4554		
23.47	-0.4553	31.39	-0.4071		
31.39	-0.4056	41.06	-0.3507		
41.06	-0.3755	53.33	-0.3270		
53.33	-0.3422	70.92	-0.2933		
70.92	-0.2871	86.46	-0.2639		
86.46	-0.2596	100.00	-0.1970		
100.00	-0.1993	109.85	-0.1508		
109.85	-0.1537				

M = 0.597

mfr = 0.650 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.4622	-15.26	0.3634	-6.25	0.4757
-6.25	0.7873	-3.00	0.9404	-3.00	0.9094
-3.00	0.9985	-1.62	1.0625	-1.62	1.0339
-1.62	1.0896	-0.71	1.0862	-0.71	1.0917
-0.71	1.0638	-0.17	0.9943	-0.17	1.0139
-0.17	0.8720	0.00	0.4773	0.00	0.7115
0.00	0.4532	0.12	-0.7673	0.50	-0.7401
0.12	-0.9692	0.50	-1.2463	2.00	-0.8767
0.50	-1.4322	1.12	-1.2045	4.46	-0.7999
1.12	-1.5942	2.00	-1.1884	9.22	-0.6370
2.00	-1.6038	3.11	-1.0850	23.47	-0.4058
3.11	-1.4523	4.46	-1.0326	53.33	-0.2996
4.46	-1.1635	6.62	-0.8315	100.00	-0.1870
6.62	-0.9242	9.22	-0.7039		
9.22	-0.8898	13.18	-0.5807		
13.18	-0.6743	17.92	-0.5344		
17.92	-0.6224	23.47	-0.4604		
23.47	-0.4971	31.39	-0.4079		
31.39	-0.4571	41.06	-0.3685		
41.06	-0.4128	53.33	-0.3356		
53.33	-0.3617	70.92	-0.2896		
70.92	-0.3027	86.46	-0.2554		
86.46	-0.2690	100.00	-0.1963		
100.00	-0.2094	109.85	-0.1514		
109.85	-0.1626				

M = 0.596

mfr = 0.652 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.4740	-15.26	0.3718	-6.25	0.4224
-6.25	0.8109	-3.00	0.9459	-3.00	0.8602
-3.00	1.0268	-1.62	1.0671	-1.62	0.9980
-1.62	1.0944	-0.71	1.0874	-0.71	1.0904
-0.71	1.0394	-0.17	0.9792	-0.17	1.0421
-0.17	0.8003	0.00	0.4864	0.00	0.8240
0.00	0.3135	0.12	-0.6665	0.50	-0.5620
0.12	-1.2797	0.50	-1.0304	2.00	-0.7651
0.50	-1.7298	1.12	-1.1394	4.46	-0.7117
1.12	-1.8615	2.00	-1.1712	9.22	-0.5091
2.00	-1.8243	3.11	-1.1216	23.47	-0.3641
3.11	-1.5673	4.46	-0.9893	53.33	-0.2768
4.46	-1.4416	6.62	-0.8282	100.00	-0.1709
6.62	-0.9893	9.22	-0.7253		
9.22	-0.9601	13.18	-0.5976		
13.18	-0.7544	17.92	-0.5400		
17.92	-0.6600	23.47	-0.4658		
23.47	-0.5408	31.39	-0.4032		
31.39	-0.4791	41.06	-0.3658		
41.06	-0.4294	53.33	-0.3353		
53.33	-0.3697	70.92	-0.2898		
70.92	-0.3201	86.46	-0.2604		
86.46	-0.2801	100.00	-0.1993		
100.00	-0.2161	109.85	-0.1557		
109.85	-0.1707				

M = 0.596

mfr = 0.648 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5287	-15.26	0.3615	-6.25	0.3595
-6.25	0.8632	-3.00	0.9334	-3.00	0.8117
-3.00	1.0403	-1.62	1.0599	-1.62	0.9718
-1.62	1.0925	-0.71	1.0812	-0.71	1.0846
-0.71	1.0240	-0.17	0.9802	-0.17	1.0622
-0.17	0.7450	0.00	0.5177	0.00	0.8875
0.00	0.2544	0.12	-0.6417	0.50	-0.3402
0.12	-1.3983	0.50	-1.0824	2.00	-0.5907
0.50	-1.8850	1.12	-1.2899	4.46	-0.5527
1.12	-2.0845	2.00	-1.2320	9.22	-0.4744
2.00	-2.2116	3.11	-1.1290	23.47	-0.3254
3.11	-2.0006	4.46	-0.9782	53.33	-0.2708
4.46	-1.8908	6.62	-0.8115	100.00	-0.1663
6.62	-1.0568	9.22	-0.7277		
9.22	-1.0127	13.18	-0.5913		
13.18	-0.8056	17.92	-0.5468		
17.92	-0.7000	23.47	-0.4750		
23.47	-0.5810	31.39	-0.4080		
31.39	-0.5188	41.06	-0.3686		
41.06	-0.4587	53.33	-0.3325		
53.33	-0.3948	70.92	-0.2940		
70.92	-0.3347	86.46	-0.2672		
86.46	-0.2840	100.00	-0.2081		
100.00	-0.2229	109.85	-0.1681		
109.85	-0.1776				

Table 8. Continued

(a) Concluded

M = 0.594

mfr = 0.696 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2266	-15.26	0.1928	-6.25	0.3947
-6.25	0.6072	-3.00	0.8396	-3.00	0.8693
-3.00	0.8861	-1.62	1.0151	-1.62	1.0184
-1.62	1.0439	-0.71	1.0904	-0.71	1.0892
-0.71	1.0928	-0.17	1.0348	-0.17	1.0217
-0.17	1.0074	0.00	0.6349	0.00	0.7484
0.00	0.6745	0.12	-0.3879	0.50	-0.6749
0.12	-0.4203	0.50	-0.8593	2.00	-0.9611
0.50	-0.7239	1.12	-0.9114	4.46	-0.8205
1.12	-0.9861	2.00	-0.9162	9.22	-0.6170
2.00	-0.9946	3.11	-0.8629	23.47	-0.4161
3.11	-0.9013	4.46	-0.7822	53.33	-0.3128
4.46	-0.8184	6.62	-0.6808	100.00	-0.1862
6.62	-0.7250	9.22	-0.6200		
9.22	-0.7165	13.18	-0.5169		
13.18	-0.5371	17.92	-0.4799		
17.92	-0.5163	23.47	-0.4208		
23.47	-0.3964	31.39	-0.3605		
31.39	-0.3763	41.06	-0.3310		
41.06	-0.3493	53.33	-0.3041		
53.33	-0.3159	70.92	-0.2721		
70.92	-0.2734	86.46	-0.2446		
86.46	-0.2411	100.00	-0.1920		
100.00	-0.1902	109.85	-0.1501		
109.85	-0.1510				

M = 0.596

mfr = 0.747 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.0119	-15.26	0.0055	-6.25	0.2130
-6.25	0.4306	-3.00	0.7028	-3.00	0.7705
-3.00	0.7499	-1.62	0.9397	-1.62	0.9547
-1.62	0.9698	-0.71	1.0765	-0.71	1.0770
-0.71	1.0845	-0.17	1.0849	-0.17	1.0729
-0.17	1.0645	0.00	0.8165	0.00	0.8795
0.00	0.8577	0.12	-0.1314	0.50	-0.3962
0.12	-0.2075	0.50	-0.5075	2.00	-0.7424
0.50	-0.4787	1.12	-0.6473	4.46	-0.6806
1.12	-0.7899	2.00	-0.6877	9.22	-0.5747
2.00	-0.7138	3.11	-0.7234	23.47	-0.3849
3.11	-0.7799	4.46	-0.6431	53.33	-0.2933
4.46	-0.6240	6.62	-0.5961	100.00	-0.1784
6.62	-0.6229	9.22	-0.5450		
9.22	-0.6255	13.18	-0.4403		
13.18	-0.4832	17.92	-0.4320		
17.92	-0.4358	23.47	-0.3748		
23.47	-0.3576	31.39	-0.3459		
31.39	-0.3465	41.06	-0.3159		
41.06	-0.3396	53.33	-0.2991		
53.33	-0.2969	70.92	-0.2602		
70.92	-0.2624	86.46	-0.2322		
86.46	-0.2370	100.00	-0.1760		
100.00	-0.1805	109.85	-0.1311		
109.85	-0.1356				

M = 0.596

mfr = 0.747 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.0469	-15.26	-0.0127	-6.25	0.1274
-6.25	0.4961	-3.00	0.7527	-3.00	0.6724
-3.00	0.8271	-1.62	0.9506	-1.62	0.8881
-1.62	1.0209	-0.71	1.0778	-0.71	1.0577
-0.71	1.0900	-0.17	1.0766	-0.17	1.0796
-0.17	1.0294	0.00	0.8222	0.00	0.9345
0.00	0.7575	0.12	-0.1352	0.50	-0.2444
0.12	-0.3174	0.50	-0.4911	2.00	-0.5896
0.50	-0.7686	1.12	-0.6615	4.46	-0.5677
1.12	-0.9609	2.00	-0.7303	9.22	-0.4602
2.00	-0.9328	3.11	-0.7470	23.47	-0.3288
3.11	-0.8907	4.46	-0.6413	53.33	-0.2677
4.46	-0.8066	6.62	-0.5712	100.00	-0.1607
6.62	-0.7220	9.22	-0.5249		
9.22	-0.6693	13.18	-0.4549		
13.18	-0.5409	17.92	-0.4465		
17.92	-0.5026	23.47	-0.3959		
23.47	-0.3923	31.39	-0.3507		
31.39	-0.3796	41.06	-0.3096		
41.06	-0.3496	53.33	-0.2934		
53.33	-0.3327	70.92	-0.2579		
70.92	-0.2719	86.46	-0.2380		
86.46	-0.2503	100.00	-0.1768		
100.00	-0.1901	109.85	-0.1344		
109.85	-0.1483				

M = 0.598

mfr = 0.746 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.1565	-15.26	-0.0146	-6.25	0.0777
-6.25	0.5690	-3.00	0.7124	-3.00	0.6073
-3.00	0.8617	-1.62	0.9358	-1.62	0.8480
-1.62	1.0276	-0.71	1.0739	-0.71	1.0326
-0.71	1.0891	-0.17	1.0769	-0.17	1.0857
-0.17	0.9985	0.00	0.8025	0.00	0.9962
0.00	0.6980	0.12	-0.0732	0.50	-0.0708
0.12	-0.5383	0.50	-0.4756	2.00	-0.3215
0.50	-0.8790	1.12	-0.6804	4.46	-0.4127
1.12	-1.1584	2.00	-0.6620	9.22	-0.3813
2.00	-1.2130	3.11	-0.7486	23.47	-0.3067
3.11	-1.1187	4.46	-0.6537	53.33	-0.2521
4.46	-0.9785	6.62	-0.5685	100.00	-0.1657
6.62	-0.8271	9.22	-0.5348		
9.22	-0.7788	13.18	-0.4371		
13.18	-0.6034	17.92	-0.4436		
17.92	-0.5504	23.47	-0.3890		
23.47	-0.4568	31.39	-0.3562		
31.39	-0.4246	41.06	-0.3177		
41.06	-0.3830	53.33	-0.2959		
53.33	-0.3441	70.92	-0.2624		
70.92	-0.2898	86.46	-0.2369		
86.46	-0.2583	100.00	-0.1840		
100.00	-0.2004	109.85	-0.1380		
109.85	-0.1557				

M = 0.597

mfr = 0.751 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2009	-15.26	-0.0277	-6.25	-0.0361
-6.25	0.6241	-3.00	0.7278	-3.00	0.5324
-3.00	0.9239	-1.62	0.9263	-1.62	0.7642
-1.62	1.0669	-0.71	1.0754	-0.71	0.9997
-0.71	1.0879	-0.17	1.0766	-0.17	1.0897
-0.17	0.9397	0.00	0.8033	0.00	1.0450
0.00	0.6067	0.12	-0.0781	0.50	0.1262
0.12	-0.7868	0.50	-0.4619	2.00	-0.2082
0.50	-1.2370	1.12	-0.6667	4.46	-0.2730
1.12	-1.3463	2.00	-0.7100	9.22	-0.2683
2.00	-1.3712	3.11	-0.7147	23.47	-0.2343
3.11	-1.1983	4.46	-0.6495	53.33	-0.2260
4.46	-1.0942	6.62	-0.5670	100.00	-0.1471
6.62	-0.9340	9.22	-0.5219		
9.22	-0.8433	13.18	-0.4465		
13.18	-0.6637	17.92	-0.4239		
17.92	-0.6232	23.47	-0.3781		
23.47	-0.5009	31.39	-0.3470		
31.39	-0.4492	41.06	-0.3183		
41.06	-0.4032	53.33	-0.2953		
53.33	-0.3584	70.92	-0.2598		
70.92	-0.3015	86.46	-0.2405		
86.46	-0.2634	100.00	-0.1831		
100.00	-0.2017	109.85	-0.1389		
109.85	-0.1580				

M = 0.597

mfr = 0.802 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	-0.2842	-15.26	-0.2920	-6.25	-0.0377
-6.25	0.2337	-3.00	0.5640	-3.00	0.5777
-3.00	0.5970	-1.62	0.8270	-1.62	0.8424
-1.62	0.8560	-0.71	1.0271	-0.71	1.0274
-0.71	1.0516	-0.17	1.0911	-0.17	1.0905
-0.17	1.0923	0.00	0.9380	0.00	1.0182
0.00	0.9631	0.12	0.1693	0.50	-0.0967
0.12	0.1425	0.50	-0.2041	2.00	-0.4666
0.50	-0.1908	1.12	-0.4322	4.46	-0.4719
1.12	-0.3569	2.00	-0.4333	9.22	-0.4529
2.00	-0.4535	3.11	-0.5051	23.47	-0.3359
3.11	-0.4593	4.46	-0.4784	53.33	-0.2636
4.46	-0.5288	6.62	-0.4387	100.00	-0.1703
6.62	-0.4846	9.22	-0.4108		
9.22	-0.5130	13.18	-0.3703		
13.18	-0.4013	17.92	-0.3668		
17.92	-0.3943	23.47	-0.3442		
23.47	-0.3005	31.39	-0.3055		
31.39	-0.3126	41.06	-0.2868		
41.06	-0.3016	53.33	-0.2694		
53.33	-0.2747	70.92	-0.2401		
70.92	-0.2445	86.46	-0.2289		
86.46	-0.2203	100.00	-0.1611		
100.00	-0.1676	109.85	-0.1298		
109.85	-0.1318				

Table 8. Continued

(b) M = 0.69

M = 0.694

mfr = 0.271 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.0908	-15.26	1.0875	-6.25	1.1224
-6.25	1.1241	-3.00	1.0596	-3.00	1.0467
-3.00	1.0393	-1.62	0.9049	-1.62	0.8993
-1.62	0.8741	-0.71	0.6562	-0.71	0.6171
-0.71	0.6224	-0.17	0.2775	-0.17	0.1574
-0.17	0.1823	0.00	-0.5510	0.00	-0.4795
0.00	-0.5125	0.12	-1.1605	0.50	-1.1601
0.12	-1.1376	0.50	-1.3872	2.00	-1.3862
0.50	-1.4224	1.12	-0.9901	4.46	-1.4082
1.12	-0.9634	2.00	-0.8234	9.22	-0.9133
2.00	-1.1232	3.11	-0.8205	23.47	-1.1234
3.11	-1.2385	4.46	-0.9157	53.33	-0.9105
4.46	-0.9109	6.62	-1.0376	100.00	-0.4776
6.62	-0.9138	9.22	-0.7552		
9.22	-1.0588	13.18	-1.0153		
13.18	-0.8486	17.92	-0.9281		
17.92	-1.1088	23.47	-0.8757		
23.47	-1.0787	31.39	-0.8661		
31.39	-0.9642	41.06	-0.9456		
41.06	-0.9816	53.33	-0.8959		
53.33	-0.8659	70.92	-0.7871		
70.92	-0.7345	86.46	-0.6486		
86.46	-0.6205	100.00	-0.4653		
100.00	-0.5379	109.85	-0.4301		
109.85	-0.4188				

M = 0.693

mfr = 0.432 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.9258	-15.26	0.9270	-6.25	1.0180
-6.25	1.0848	-3.00	1.1265	-3.00	1.1253
-3.00	1.1220	-1.62	1.0779	-1.62	1.0778
-1.62	1.0619	-0.71	0.9132	-0.71	0.9021
-0.71	0.8920	-0.17	0.6158	-0.17	0.5255
-0.17	0.5475	0.00	-0.0932	0.00	0.0011
0.00	-0.0177	0.12	-1.3740	0.50	-1.8176
0.12	-1.4446	0.50	-1.8080	2.00	-1.9084
0.50	-1.8147	1.12	-1.8085	4.46	-1.6433
1.12	-1.9673	2.00	-1.3086	9.22	-1.6323
2.00	-1.8492	3.11	-1.6638	23.47	-0.9203
3.11	-1.7459	4.46	-2.0903	53.33	-0.4128
4.46	-1.8560	6.62	-1.5697	100.00	-0.2377
6.62	-1.5325	9.22	-1.4050		
9.22	-1.5092	13.18	-1.3367		
13.18	-1.3697	17.92	-1.0975		
17.92	-1.2448	23.47	-1.1199		
23.47	-0.9890	31.39	-0.7500		
31.39	-0.7782	41.06	-0.4622		
41.06	-0.5950	53.33	-0.4283		
53.33	-0.4285	70.92	-0.3291		
70.92	-0.3295	86.46	-0.2915		
86.46	-0.2928	100.00	-0.2387		
100.00	-0.2400	109.85	-0.1923		
109.85	-0.1952				

M = 0.694

mfr = 0.491 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8314	-15.26	0.8208	-6.25	0.9375
-6.25	1.0418	-3.00	1.1214	-3.00	1.1224
-3.00	1.1245	-1.62	1.1124	-1.62	1.1114
-1.62	1.0988	-0.71	0.9922	-0.71	0.9943
-0.71	0.9676	-0.17	0.7372	-0.17	0.6654
-0.17	0.6676	0.00	0.0861	0.00	0.1929
0.00	0.1542	0.12	-1.2335	0.50	-1.7487
0.12	-1.2820	0.50	-1.6900	2.00	-1.9426
0.50	-1.6455	1.12	-1.9403	4.46	-1.9441
1.12	-1.8945	2.00	-1.9426	9.22	-1.7596
2.00	-1.9522	3.11	-1.9603	23.47	-0.5072
3.11	-1.9751	4.46	-1.9674	53.33	-0.4091
4.46	-1.9009	6.62	-1.8297	100.00	-0.2368
6.62	-1.8640	9.22	-1.7578		
9.22	-1.8420	13.18	-1.4923		
13.18	-1.6443	17.92	-0.6903		
17.92	-0.6794	23.47	-0.5143		
23.47	-0.4817	31.39	-0.4865		
31.39	-0.4770	41.06	-0.4441		
41.06	-0.4520	53.33	-0.4013		
53.33	-0.4089	70.92	-0.3456		
70.92	-0.3434	86.46	-0.3071		
86.46	-0.3000	100.00	-0.2384		
100.00	-0.2351	109.85	-0.1841		
109.85	-0.1866				

M = 0.693

mfr = 0.541 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7265	-15.26	0.7375	-6.25	0.8669
-6.25	0.9846	-3.00	1.0976	-3.00	1.1073
-3.00	1.1128	-1.62	1.1252	-1.62	1.1238
-1.62	1.1255	-0.71	1.0551	-0.71	1.0469
-0.71	1.0298	-0.17	0.8442	-0.17	0.7674
-0.17	0.7705	0.00	0.2312	0.00	0.3369
0.00	0.2953	0.12	-1.0139	0.50	-1.5210
0.12	-1.1444	0.50	-1.5507	2.00	-1.7920
0.50	-1.4869	1.12	-1.8016	4.46	-1.7667
1.12	-1.7302	2.00	-1.7925	9.22	-1.5560
2.00	-1.8191	3.11	-1.8513	23.47	-0.5307
3.11	-1.8191	4.46	-1.8106	53.33	-0.3951
4.46	-1.7514	6.62	-1.7051	100.00	-0.2298
6.62	-1.7315	9.22	-1.5751		
9.22	-1.6247	13.18	-0.8385		
13.18	-1.0765	17.92	-0.5928		
17.92	-0.5850	23.47	-0.5393		
23.47	-0.5013	31.39	-0.4912		
31.39	-0.4839	41.06	-0.4413		
41.06	-0.4455	53.33	-0.3929		
53.33	-0.3981	70.92	-0.3393		
70.92	-0.3384	86.46	-0.2964		
86.46	-0.2940	100.00	-0.2255		
100.00	-0.2327	109.85	-0.1795		
109.85	-0.1828				

M = 0.695

mfr = 0.590 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6351	-15.26	0.5939	-6.25	0.7573
-6.25	0.9019	-3.00	1.0501	-3.00	1.0707
-3.00	1.0690	-1.62	1.1261	-1.62	1.1274
-1.62	1.1305	-0.71	1.0924	-0.71	1.0926
-0.71	1.0778	-0.17	0.9376	-0.17	0.8907
-0.17	0.8750	0.00	0.4098	0.00	0.5029
0.00	0.4811	0.12	-0.7724	0.50	-1.3441
0.12	-0.7791	0.50	-1.3498	2.00	-1.5122
0.50	-1.2852	1.12	-1.5271	4.46	-1.5055
1.12	-1.4926	2.00	-1.6251	9.22	-1.4394
2.00	-1.6470	3.11	-1.6332	23.47	-0.5299
3.11	-1.7280	4.46	-1.6047	53.33	-0.3724
4.46	-1.6347	6.62	-1.4194	100.00	-0.2149
6.62	-1.4604	9.22	-1.2894		
9.22	-1.3565	13.18	-0.6390		
13.18	-0.6072	17.92	-0.5995		
17.92	-0.6057	23.47	-0.5423		
23.47	-0.5064	31.39	-0.4697		
31.39	-0.4717	41.06	-0.4195		
41.06	-0.4373	53.33	-0.3718		
53.33	-0.3774	70.92	-0.3249		
70.92	-0.3246	86.46	-0.2905		
86.46	-0.2804	100.00	-0.2163		
100.00	-0.2184	109.85	-0.1650		
109.85	-0.1687				

M = 0.694

mfr = 0.643 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.4582	-15.26	0.4298	-6.25	0.6106
-6.25	0.8076	-3.00	0.9889	-3.00	0.9988
-3.00	1.0072	-1.62	1.0984	-1.62	1.1032
-1.62	1.1155	-0.71	1.1194	-0.71	1.1177
-0.71	1.1176	-0.17	1.0146	-0.17	0.9856
-0.17	0.9595	0.00	0.5555	0.00	0.6689
0.00	0.6108	0.12	-0.5729	0.50	-0.9156
0.12	-0.6219	0.50	-1.0355	2.00	-1.2840
0.50	-0.9447	1.12	-1.3419	4.46	-1.1550
1.12	-1.2892	2.00	-1.2912	9.22	-0.8650
2.00	-1.4041	3.11	-1.3634	23.47	-0.5013
3.11	-1.4037	4.46	-1.2951	53.33	-0.3634
4.46	-1.3925	6.62	-1.0824	100.00	-0.2135
6.62	-1.2127	9.22	-0.7832		
9.22	-0.8814	13.18	-0.6160		
13.18	-0.6198	17.92	-0.5869		
17.92	-0.5951	23.47	-0.5147		
23.47	-0.4854	31.39	-0.4430		
31.39	-0.4472	41.06	-0.3957		
41.06	-0.3983	53.33	-0.3526		
53.33	-0.3544	70.92	-0.3067		
70.92	-0.3036	86.46	-0.2767		
86.46	-0.2727	100.00	-0.2067		
100.00	-0.2085	109.85	-0.1613		
109.85	-0.1590				

Table 8. Continued

(b) Concluded

M = 0.695

mfr = 0.692 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	0.2823	-15.26	0.2794	-6.25	0.4677
-6.25	0.6641	-3.00	0.9083	-3.00	0.9306
-3.00	0.9157	-1.62	1.0566	-1.62	1.0633
-1.62	1.0830	-0.71	1.1232	-0.71	1.1261
-0.71	1.1256	-0.17	1.0699	-0.17	1.0381
-0.17	1.0412	0.00	0.7196	0.00	0.7871
0.00	0.7220	0.12	-0.2890	0.50	-0.6921
0.12	-0.3168	0.50	-0.7099	2.00	-1.1048
0.50	-0.7523	1.12	-0.9039	4.46	-1.0018
1.12	-1.0207	2.00	-1.0118	9.22	-0.7880
2.00	-1.1722	3.11	-1.1783	23.47	-0.4656
3.11	-1.1391	4.46	-1.0027	53.33	-0.3395
4.46	-0.9506	6.62	-0.8239	100.00	-0.1974
6.62	-0.7753	9.22	-0.7246		
9.22	-0.8143	13.18	-0.5647		
13.18	-0.5543	17.92	-0.5433		
17.92	-0.5490	23.47	-0.4728		
23.47	-0.4501	31.39	-0.4205		
31.39	-0.4139	41.06	-0.3807		
41.06	-0.3831	53.33	-0.3387		
53.33	-0.3430	70.92	-0.2924		
70.92	-0.2978	86.46	-0.2675		
86.46	-0.2615	100.00	-0.1981		
100.00	-0.2016	109.85	-0.1468		
109.85	-0.1535				

M = 0.695

mfr = 0.746 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	0.0791	-15.26	0.0613	-6.25	0.2742
-6.25	0.5206	-3.00	0.7942	-3.00	0.8267
-3.00	0.8235	-1.62	0.9968	-1.62	0.9924
-1.62	1.0288	-0.71	1.1166	-0.71	1.1120
-0.71	1.1231	-0.17	1.1109	-0.17	1.0924
-0.17	1.0930	0.00	0.8513	0.00	0.9231
0.00	0.8696	0.12	-0.0719	0.50	-0.3748
0.12	-0.0755	0.50	-0.4652	2.00	-0.7025
0.50	-0.3864	1.12	-0.6667	4.46	-0.7192
1.12	-0.7380	2.00	-0.6720	9.22	-0.6094
2.00	-0.7725	3.11	-0.7693	23.47	-0.4171
3.11	-0.8923	4.46	-0.7097	53.33	-0.3209
4.46	-0.7235	6.62	-0.6123	100.00	-0.1865
6.62	-0.6879	9.22	-0.5855		
9.22	-0.7265	13.18	-0.5015		
13.18	-0.5216	17.92	-0.4843		
17.92	-0.4925	23.47	-0.3976		
23.47	-0.4016	31.39	-0.3750		
31.39	-0.3763	41.06	-0.3430		
41.06	-0.3530	53.33	-0.3141		
53.33	-0.3243	70.92	-0.2746		
70.92	-0.2783	86.46	-0.2527		
86.46	-0.2500	100.00	-0.1859		
100.00	-0.1909	109.85	-0.1380		
109.85	-0.1402				

M = 0.693

mfr = 0.789 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.1922	-15.26	-0.2209	-6.25	0.0682
-6.25	0.3296	-3.00	0.6369	-3.00	0.6912
-3.00	0.6878	-1.62	0.9020	-1.62	0.8891
-1.62	0.9343	-0.71	1.0720	-0.71	1.0800
-0.71	1.0917	-0.17	1.1193	-0.17	1.1174
-0.17	1.1184	0.00	0.9536	0.00	1.0037
0.00	0.9920	0.12	0.2041	0.50	-0.0983
0.12	0.1798	0.50	-0.1584	2.00	-0.5305
0.50	-0.1325	1.12	-0.4250	4.46	-0.5429
1.12	-0.4151	2.00	-0.4657	9.22	-0.5219
2.00	-0.5452	3.11	-0.5233	23.47	-0.3757
3.11	-0.5832	4.46	-0.5496	53.33	-0.2997
4.46	-0.5747	6.62	-0.4993	100.00	-0.1760
6.62	-0.5120	9.22	-0.4834		
9.22	-0.5683	13.18	-0.4025		
13.18	-0.4298	17.92	-0.4092		
17.92	-0.4607	23.47	-0.3704		
23.47	-0.3446	31.39	-0.3373		
31.39	-0.3310	41.06	-0.3218		
41.06	-0.3369	53.33	-0.2987		
53.33	-0.3144	70.92	-0.2642		
70.92	-0.2724	86.46	-0.2475		
86.46	-0.2435	100.00	-0.1794		
100.00	-0.1774	109.85	-0.1369		
109.85	-0.1384				

Table 8. Continued

(c) M = 0.74

M = 0.743

mfr = 0.541 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7688	-15.26	0.7610	-6.25	0.8853
-6.25	0.9959	-3.00	1.1201	-3.00	1.1258
-3.00	1.1244	-1.62	1.1453	-1.62	1.1467
-1.62	1.1437	-0.71	1.0733	-0.71	1.0771
-0.71	1.0613	-0.17	0.8845	-0.17	0.8255
-0.17	0.8119	0.00	0.3017	0.00	0.4265
0.00	0.3712	0.12	-0.8122	0.50	-1.3274
0.12	-0.9125	0.50	-1.2951	2.00	-1.5512
0.50	-1.2519	1.12	-1.5291	4.46	-1.5948
1.12	-1.4871	2.00	-1.5525	9.22	-1.5117
2.00	-1.5622	3.11	-1.6030	23.47	-0.8326
3.11	-1.5792	4.46	-1.6004	53.33	-0.3879
4.46	-1.6090	6.62	-1.5395	100.00	-0.2311
6.62	-1.5576	9.22	-1.4817		
9.22	-1.5196	13.18	-1.4004		
13.18	-1.4178	17.92	-1.3057		
17.92	-1.3142	23.47	-0.7300		
23.47	-0.8414	31.39	-0.4025		
31.39	-0.3886	41.06	-0.3871		
41.06	-0.4091	53.33	-0.3849		
53.33	-0.3925	70.92	-0.3418		
70.92	-0.3391	86.46	-0.3038		
86.46	-0.2965	100.00	-0.2215		
100.00	-0.2291	109.85	-0.1756		
109.85	-0.1794				

M = 0.745

mfr = 0.592 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6469	-15.26	0.6287	-6.25	0.7600
-6.25	0.9354	-3.00	1.0831	-3.00	1.0898
-3.00	1.0841	-1.62	1.1476	-1.62	1.1430
-1.62	1.1467	-0.71	1.1156	-0.71	1.1066
-0.71	1.1113	-0.17	0.9742	-0.17	0.9102
-0.17	0.9362	0.00	0.4721	0.00	0.5573
0.00	0.5816	0.12	-0.5893	0.50	-1.1538
0.12	-0.6462	0.50	-1.1369	2.00	-1.3726
0.50	-1.0900	1.12	-1.3378	4.46	-1.4298
1.12	-1.3020	2.00	-1.4038	9.22	-1.3952
2.00	-1.4083	3.11	-1.4493	23.47	-0.4482
3.11	-1.4627	4.46	-1.4437	53.33	-0.3949
4.46	-1.4913	6.62	-1.3852	100.00	-0.2218
6.62	-1.4253	9.22	-1.3417		
9.22	-1.3958	13.18	-1.2993		
13.18	-1.3014	17.92	-1.0410		
17.92	-0.9884	23.47	-0.4378		
23.47	-0.4249	31.39	-0.4355		
31.39	-0.4303	41.06	-0.4183		
41.06	-0.4322	53.33	-0.3880		
53.33	-0.3898	70.92	-0.3351		
70.92	-0.3299	86.46	-0.2975		
86.46	-0.2967	100.00	-0.2218		
100.00	-0.2219	109.85	-0.1683		
109.85	-0.1712				

M = 0.742

mfr = 0.644 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.4897	-15.26	0.4767	-6.25	0.6298
-6.25	0.8172	-3.00	0.9934	-3.00	1.0202
-3.00	1.0415	-1.62	1.1246	-1.62	1.1237
-1.62	1.1346	-0.71	1.1372	-0.71	1.1402
-0.71	1.1334	-0.17	1.0456	-0.17	0.9964
-0.17	1.0141	0.00	0.6257	0.00	0.6948
0.00	0.6716	0.12	-0.3874	0.50	-0.8645
0.12	-0.4825	0.50	-0.8623	2.00	-1.1572
0.50	-0.9191	1.12	-1.1848	4.46	-1.2937
1.12	-1.1210	2.00	-1.1708	9.22	-1.1712
2.00	-1.2414	3.11	-1.2205	23.47	-0.4978
3.11	-1.3003	4.46	-1.2772	53.33	-0.3839
4.46	-1.2678	6.62	-1.2493	100.00	-0.2170
6.62	-1.2790	9.22	-1.1598		
9.22	-1.2542	13.18	-0.6539		
13.18	-0.8924	17.92	-0.5217		
17.92	-0.5422	23.47	-0.5060		
23.47	-0.4782	31.39	-0.4609		
31.39	-0.4615	41.06	-0.4196		
41.06	-0.4288	53.33	-0.3746		
53.33	-0.3877	70.92	-0.3186		
70.92	-0.3221	86.46	-0.2950		
86.46	-0.2817	100.00	-0.2152		
100.00	-0.2090	109.85	-0.1642		
109.85	-0.1585				

M = 0.743

mfr = 0.692 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2820	-15.26	0.3141	-6.25	0.4888
-6.25	0.7051	-3.00	0.9520	-3.00	0.9525
-3.00	0.9668	-1.62	1.0919	-1.62	1.0819
-1.62	1.1085	-0.71	1.1441	-0.71	1.1431
-0.71	1.1463	-0.17	1.0941	-0.17	1.0654
-0.17	1.0668	0.00	0.7573	0.00	0.8399
0.00	0.8116	0.12	-0.2060	0.50	-0.6244
0.12	-0.2148	0.50	-0.5943	2.00	-1.0330
0.50	-0.5781	1.12	-0.8821	4.46	-1.1085
1.12	-0.8825	2.00	-0.9074	9.22	-0.8237
2.00	-0.9632	3.11	-1.0177	23.47	-0.4736
3.11	-1.0462	4.46	-1.0815	53.33	-0.3602
4.46	-1.1394	6.62	-0.9703	100.00	-0.2051
6.62	-1.0454	9.22	-0.8490		
9.22	-0.8887	13.18	-0.5678		
13.18	-0.5454	17.92	-0.5639		
17.92	-0.5917	23.47	-0.4905		
23.47	-0.4714	31.39	-0.4199		
31.39	-0.4373	41.06	-0.3908		
41.06	-0.4035	53.33	-0.3517		
53.33	-0.3624	70.92	-0.3104		
70.92	-0.3038	86.46	-0.2803		
86.46	-0.2700	100.00	-0.2038		
100.00	-0.2063	109.85	-0.1568		
109.85	-0.1518				

M = 0.742

mfr = 0.745 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.0589	-15.26	0.0695	-6.25	0.2838
-6.25	0.5307	-3.00	0.8228	-3.00	0.8283
-3.00	0.8719	-1.62	1.0251	-1.62	1.0068
-1.62	1.0404	-0.71	1.1348	-0.71	1.1327
-0.71	1.1420	-0.17	1.1281	-0.17	1.1134
-0.17	1.1142	0.00	0.8693	0.00	0.9407
0.00	0.9098	0.12	0.0638	0.50	-0.3107
0.12	-0.0149	0.50	-0.4020	2.00	-0.8399
0.50	-0.3934	1.12	-0.5832	4.46	-0.7696
1.12	-0.6063	2.00	-0.7124	9.22	-0.6408
2.00	-0.7493	3.11	-0.7696	23.47	-0.4492
3.11	-0.7633	4.46	-0.7696	53.33	-0.3453
4.46	-0.7493	6.62	-0.6744	100.00	-0.2050
6.62	-0.6766	9.22	-0.6867		
9.22	-0.7385	13.18	-0.4898		
13.18	-0.5159	17.92	-0.4876		
17.92	-0.5170	23.47	-0.4396		
23.47	-0.4327	31.39	-0.3799		
31.39	-0.4027	41.06	-0.3563		
41.06	-0.3666	53.33	-0.3267		
53.33	-0.3243	70.92	-0.2847		
70.92	-0.2916	86.46	-0.2620		
86.46	-0.2532	100.00	-0.1913		
100.00	-0.1879	109.85	-0.1401		
109.85	-0.1392				

M = 0.744

mfr = 0.792 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	-0.1858	-15.26	-0.2281	-6.25	0.0828
-6.25	0.3479	-3.00	0.6779	-3.00	0.7264
-3.00	0.7105	-1.62	0.9198	-1.62	0.9237
-1.62	0.9596	-0.71	1.0965	-0.71	1.1004
-0.71	1.1100	-0.17	1.1442	-0.17	1.1442
-0.17	1.1424	0.00	0.9823	0.00	1.0317
0.00	1.0143	0.12	0.2334	0.50	-0.0553
0.12	0.2287	0.50	-0.1238	2.00	-0.5069
0.50	-0.0362	1.12	-0.3653	4.46	-0.5836
1.12	-0.3237	2.00	-0.4642	9.22	-0.5457
2.00	-0.4982	3.11	-0.5706	23.47	-0.3997
3.11	-0.6227	4.46	-0.5623	53.33	-0.3287
4.46	-0.5672	6.62	-0.5038	100.00	-0.1808
6.62	-0.5462	9.22	-0.5906		
9.22	-0.6157	13.18	-0.4194		
13.18	-0.4586	17.92	-0.4246		
17.92	-0.4485	23.47	-0.3914		
23.47	-0.3713	31.39	-0.3696		
31.39	-0.3721	41.06	-0.3388		
41.06	-0.3721	53.33	-0.3147		
53.33	-0.3357	70.92	-0.2820		
70.92	-0.2838	86.46	-0.2542		
86.46	-0.2562	100.00	-0.1796		
100.00	-0.1835	109.85	-0.1359		
109.85	-0.1376				

Table 8. Continued

(d) M = 0.77

M = 0.770

mfr = 0.269 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.1206	-15.26	1.1207	-6.25	1.1523
-6.25	1.1540	-3.00	1.0897	-3.00	1.0797
-3.00	1.0812	-1.62	0.9576	-1.62	0.9564
-1.62	0.9334	-0.71	0.7216	-0.71	0.6988
-0.71	0.6836	-0.17	0.3900	-0.17	0.2522
-0.17	0.3081	0.00	-0.3843	0.00	-0.3283
0.00	-0.3391	0.12	-1.0604	0.50	-1.0998
0.12	-1.1693	0.50	-1.1355	2.00	-1.1434
0.50	-1.1113	1.12	-0.9644	4.46	-1.1438
1.12	-1.1316	2.00	-1.0795	9.22	-1.2075
2.00	-1.1246	3.11	-0.8360	23.47	-1.0733
3.11	-0.8147	4.46	-0.9810	53.33	-0.8526
4.46	-1.0913	6.62	-0.9656	100.00	-0.5846
6.62	-1.0646	9.22	-0.9440		
9.22	-1.0439	13.18	-0.9519		
13.18	-1.0067	17.92	-0.9291		
17.92	-1.0114	23.47	-1.0117		
23.47	-1.0096	31.39	-0.8591		
31.39	-1.0051	41.06	-0.9423		
41.06	-0.9870	53.33	-0.9328		
53.33	-0.8628	70.92	-0.8465		
70.92	-0.8021	86.46	-0.7238		
86.46	-0.6586	100.00	-0.6432		
100.00	-0.6564	109.85	-0.5639		
109.85	-0.5248				

M = 0.767

mfr = 0.430 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.9616	-15.26	0.9664	-6.25	1.0494
-6.25	1.1179	-3.00	1.1589	-3.00	1.1567
-3.00	1.1563	-1.62	1.1152	-1.62	1.1192
-1.62	1.1005	-0.71	0.9664	-0.71	0.9583
-0.71	0.9384	-0.17	0.7182	-0.17	0.6139
-0.17	0.6289	0.00	0.0684	0.00	0.1474
0.00	0.1307	0.12	-1.0531	0.50	-1.5150
0.12	-1.1001	0.50	-1.5305	2.00	-1.7411
0.50	-1.4317	1.12	-1.6802	4.46	-1.7532
1.12	-1.6240	2.00	-1.7432	9.22	-1.6765
2.00	-1.7202	3.11	-1.7549	23.47	-1.4094
3.11	-1.7510	4.46	-1.7603	53.33	-0.3243
4.46	-1.7187	6.62	-1.6994	100.00	-0.2129
6.62	-1.6946	9.22	-1.6364		
9.22	-1.6489	13.18	-1.5763		
13.18	-1.5797	17.92	-1.4799		
17.92	-1.5279	23.47	-1.4019		
23.47	-1.3574	31.39	-1.2968		
31.39	-1.3096	41.06	-0.6741		
41.06	-0.6208	53.33	-0.3708		
53.33	-0.3639	70.92	-0.2638		
70.92	-0.2606	86.46	-0.2678		
86.46	-0.2592	100.00	-0.2133		
100.00	-0.2105	109.85	-0.1697		
109.85	-0.1754				

M = 0.766

mfr = 0.491 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8726	-15.26	0.8710	-6.25	0.9752
-6.25	1.0699	-3.00	1.1512	-3.00	1.1520
-3.00	1.1536	-1.62	1.1427	-1.62	1.1437
-1.62	1.1407	-0.71	1.0436	-0.71	1.0439
-0.71	1.0208	-0.17	0.8248	-0.17	0.7553
-0.17	0.7482	0.00	0.2322	0.00	0.3210
0.00	0.3032	0.12	-0.9019	0.50	-1.3787
0.12	-1.0011	0.50	-1.3608	2.00	-1.5836
0.50	-1.3227	1.12	-1.5694	4.46	-1.6180
1.12	-1.5318	2.00	-1.5660	9.22	-1.5209
2.00	-1.5828	3.11	-1.6117	23.47	-1.2900
3.11	-1.6074	4.46	-1.6305	53.33	-0.3031
4.46	-1.6300	6.62	-1.5677	100.00	-0.2241
6.62	-1.5806	9.22	-1.5146		
9.22	-1.5728	13.18	-1.4606		
13.18	-1.4624	17.92	-1.3783		
17.92	-1.3803	23.47	-1.3001		
23.47	-1.2846	31.39	-1.1069		
31.39	-1.1756	41.06	-0.4320		
41.06	-0.4844	53.33	-0.2956		
53.33	-0.2935	70.92	-0.3113		
70.92	-0.2913	86.46	-0.2934		
86.46	-0.2831	100.00	-0.2244		
100.00	-0.2239	109.85	-0.1742		
109.85	-0.1731				

M = 0.767

mfr = 0.543 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7737	-15.26	0.7749	-6.25	0.8856
-6.25	1.0081	-3.00	1.1314	-3.00	1.1348
-3.00	1.1345	-1.62	1.1565	-1.62	1.1544
-1.62	1.1515	-0.71	1.0870	-0.71	1.0916
-0.71	1.0809	-0.17	0.9098	-0.17	0.8548
-0.17	0.8425	0.00	0.3843	0.00	0.4709
0.00	0.4286	0.12	-0.7337	0.50	-1.2268
0.12	-0.7856	0.50	-1.1922	2.00	-1.4527
0.50	-1.0966	1.12	-1.4314	4.46	-1.4923
1.12	-1.3887	2.00	-1.4460	9.22	-1.4289
2.00	-1.4864	3.11	-1.4923	23.47	-1.1654
3.11	-1.4715	4.46	-1.5006	53.33	-0.3446
4.46	-1.5069	6.62	-1.4618	100.00	-0.2210
6.62	-1.4800	9.22	-1.3783		
9.22	-1.4236	13.18	-1.3212		
13.18	-1.3645	17.92	-1.2568		
17.92	-1.2638	23.47	-1.1687		
23.47	-1.1568	31.39	-0.5301		
31.39	-0.6994	41.06	-0.3289		
41.06	-0.3385	53.33	-0.3416		
53.33	-0.3378	70.92	-0.3359		
70.92	-0.3255	86.46	-0.3028		
86.46	-0.2955	100.00	-0.2266		
100.00	-0.2289	109.85	-0.1717		
109.85	-0.1719				

M = 0.768

mfr = 0.542 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8113	-15.26	0.7664	-6.25	0.8603
-6.25	1.0362	-3.00	1.1300	-3.00	1.1218
-3.00	1.1473	-1.62	1.1567	-1.62	1.1567
-1.62	1.1488	-0.71	1.0893	-0.71	1.1096
-0.71	1.0513	-0.17	0.9073	-0.17	0.9027
-0.17	0.8110	0.00	0.3757	0.00	0.5141
0.00	0.3768	0.12	-0.7349	0.50	-1.1495
0.12	-0.9229	0.50	-1.2129	2.00	-1.3506
0.50	-1.2299	1.12	-1.4247	4.46	-1.3822
1.12	-1.4734	2.00	-1.4711	9.22	-1.3260
2.00	-1.5584	3.11	-1.4894	23.47	-0.9456
3.11	-1.5235	4.46	-1.4911	53.33	-0.3770
4.46	-1.5618	6.62	-1.4389	100.00	-0.2194
6.62	-1.5429	9.22	-1.4110		
9.22	-1.5253	13.18	-1.3418		
13.18	-1.4368	17.92	-1.2604		
17.92	-1.3669	23.47	-1.1807		
23.47	-1.2384	31.39	-0.6523		
31.39	-1.1456	41.06	-0.3356		
41.06	-0.4582	53.33	-0.3499		
53.33	-0.2964	70.92	-0.3286		
70.92	-0.2989	86.46	-0.3047		
86.46	-0.2800	100.00	-0.2272		
100.00	-0.2232	109.85	-0.1746		
109.85	-0.1703				

M = 0.769

mfr = 0.541 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8363	-15.26	0.7792	-6.25	0.8321
-6.25	1.0521	-3.00	1.1291	-3.00	1.1056
-3.00	1.1487	-1.62	1.1562	-1.62	1.1541
-1.62	1.1406	-0.71	1.0905	-0.71	1.1239
-0.71	1.0193	-0.17	0.9096	-0.17	0.9320
-0.17	0.7666	0.00	0.3790	0.00	0.6069
0.00	0.2938	0.12	-0.7337	0.50	-1.0024
0.12	-1.0108	0.50	-1.2204	2.00	-1.1925
0.50	-1.3141	1.12	-1.4419	4.46	-1.3216
1.12	-1.5566	2.00	-1.4558	9.22	-1.2641
2.00	-1.6044	3.11	-1.4987	23.47	-0.3992
3.11	-1.6366	4.46	-1.4957	53.33	-0.3808
4.46	-1.6288	6.62	-1.4537	100.00	-0.2230
6.62	-1.6051	9.22	-1.3907		
9.22	-1.5948	13.18	-1.3499		
13.18	-1.5086	17.92	-1.2757		
17.92	-1.4665	23.47	-1.1896		
23.47	-1.3567	31.39	-0.7972		
31.39	-1.2407	41.06	-0.3548		
41.06	-0.6263	53.33	-0.3483		
53.33	-0.3515	70.92	-0.3366		
70.92	-0.2543	86.46	-0.3019		
86.46	-0.2693	100.00	-0.2306		
100.00	-0.2069	109.85	-0.1775		
109.85	-0.1678				

Table 8. Continued

(d) Continued

M = 0.768

mfr = 0.539 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8582	-15.26	0.7677	-6.25	0.7962
-6.25	1.0747	-3.00	1.1306	-3.00	1.0897
-3.00	1.1567	-1.62	1.1535	-1.62	1.1495
-1.62	1.1312	-0.71	1.0894	-0.71	1.1386
-0.71	1.0068	-0.17	0.9103	-0.17	0.9805
-0.17	0.7065	0.00	0.3602	0.00	0.6687
0.00	0.2348	0.12	-0.7492	0.50	-0.8260
0.12	-1.0538	0.50	-1.1926	2.00	-1.1288
0.50	-1.3917	1.12	-1.4321	4.46	-1.2136
1.12	-1.5897	2.00	-1.4451	9.22	-1.1201
2.00	-1.6758	3.11	-1.4814	23.47	-0.4551
3.11	-1.6770	4.46	-1.4931	53.33	-0.3707
4.46	-1.7089	6.62	-1.4476	100.00	-0.2164
6.62	-1.6933	9.22	-1.4000		
9.22	-1.6528	13.18	-1.3296		
13.18	-1.6066	17.92	-1.2453		
17.92	-1.5243	23.47	-1.1789		
23.47	-1.4393	31.39	-0.5487		
31.39	-1.2777	41.06	-0.3842		
41.06	-0.7431	53.33	-0.3824		
53.33	-0.5425	70.92	-0.3485		
70.92	-0.2525	86.46	-0.3142		
86.46	-0.2050	100.00	-0.2319		
100.00	-0.1895	109.85	-0.1744		
109.85	-0.1588				

M = 0.768

mfr = 0.591 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6572	-15.26	0.6427	-6.25	0.7826
-6.25	0.9392	-3.00	1.0908	-3.00	1.0938
-3.00	1.1037	-1.62	1.1549	-1.62	1.1528
-1.62	1.1573	-0.71	1.1311	-0.71	1.1284
-0.71	1.1170	-0.17	0.9897	-0.17	0.9452
-0.17	0.9540	0.00	0.5208	0.00	0.6078
0.00	0.5908	0.12	-0.5549	0.50	-1.0250
0.12	-0.5650	0.50	-1.0346	2.00	-1.2692
0.50	-0.9611	1.12	-1.2267	4.46	-1.3565
1.12	-1.2160	2.00	-1.3064	9.22	-1.3085
2.00	-1.3211	3.11	-1.3465	23.47	-0.6609
3.11	-1.3675	4.46	-1.3819	53.33	-0.3846
4.46	-1.3847	6.62	-1.3310	100.00	-0.2184
6.62	-1.3616	9.22	-1.2700		
9.22	-1.3463	13.18	-1.2304		
13.18	-1.2671	17.92	-1.1373		
17.92	-1.1766	23.47	-0.8614		
23.47	-1.0550	31.39	-0.3766		
31.39	-0.3718	41.06	-0.3719		
41.06	-0.3970	53.33	-0.3779		
53.33	-0.3777	70.92	-0.3388		
70.92	-0.3309	86.46	-0.2974		
86.46	-0.2982	100.00	-0.2195		
100.00	-0.2238	109.85	-0.1659		
109.85	-0.1690				

M = 0.768

mfr = 0.647 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.4917	-15.26	0.4807	-6.25	0.6429
-6.25	0.8250	-3.00	1.0254	-3.00	1.0409
-3.00	1.0551	-1.62	1.1261	-1.62	1.1356
-1.62	1.1424	-0.71	1.1511	-0.71	1.1523
-0.71	1.1513	-0.17	1.0579	-0.17	1.0242
-0.17	1.0329	0.00	0.6594	0.00	0.7318
0.00	0.7273	0.12	-0.3491	0.50	-0.7144
0.12	-0.4156	0.50	-0.8347	2.00	-1.0817
0.50	-0.7868	1.12	-1.0821	4.46	-1.2363
1.12	-1.0017	2.00	-1.1005	9.22	-1.1026
2.00	-1.1616	3.11	-1.1598	23.47	-0.4277
3.11	-1.1933	4.46	-1.1966	53.33	-0.3859
4.46	-1.2122	6.62	-1.1702	100.00	-0.2121
6.62	-1.1780	9.22	-1.1355		
9.22	-1.2111	13.18	-1.0725		
13.18	-1.0742	17.92	-0.7933		
17.92	-0.9355	23.47	-0.4319		
23.47	-0.4257	31.39	-0.4330		
31.39	-0.4320	41.06	-0.4164		
41.06	-0.4242	53.33	-0.3772		
53.33	-0.3848	70.92	-0.3284		
70.92	-0.3301	86.46	-0.2945		
86.46	-0.2892	100.00	-0.2133		
100.00	-0.2152	109.85	-0.1553		
109.85	-0.1592				

M = 0.768

mfr = 0.647 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5517	-15.26	0.4750	-6.25	0.6044
-6.25	0.8633	-3.00	1.0135	-3.00	0.9970
-3.00	1.0638	-1.62	1.1293	-1.62	1.1184
-1.62	1.1484	-0.71	1.1509	-0.71	1.1529
-0.71	1.1377	-0.17	1.0548	-0.17	1.0544
-0.17	0.9857	0.00	0.6556	0.00	0.8000
0.00	0.6707	0.12	-0.3305	0.50	-0.5422
0.12	-0.4960	0.50	-0.8158	2.00	-0.9403
0.50	-0.9376	1.12	-1.0707	4.46	-1.0703
1.12	-1.1291	2.00	-1.0811	9.22	-1.0297
2.00	-1.2447	3.11	-1.1321	23.47	-0.4813
3.11	-1.3012	4.46	-1.1926	53.33	-0.3651
4.46	-1.3309	6.62	-1.1955	100.00	-0.2114
6.62	-1.3046	9.22	-1.1283		
9.22	-1.2837	13.18	-1.0828		
13.18	-1.2177	17.92	-0.7218		
17.92	-1.1629	23.47	-0.4461		
23.47	-0.9730	31.39	-0.4422		
31.39	-0.3751	41.06	-0.4174		
41.06	-0.4030	53.33	-0.3748		
53.33	-0.3848	70.92	-0.3295		
70.92	-0.3350	86.46	-0.2946		
86.46	-0.2888	100.00	-0.2128		
100.00	-0.2212	109.85	-0.1582		
109.85	-0.1634				

M = 0.768

mfr = 0.648 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5713	-15.26	0.4814	-6.25	0.5543
-6.25	0.8973	-3.00	1.0213	-3.00	0.9541
-3.00	1.0857	-1.62	1.1361	-1.62	1.0877
-1.62	1.1541	-0.71	1.1487	-0.71	1.1563
-0.71	1.1172	-0.17	1.0596	-0.17	1.0838
-0.17	0.9498	0.00	0.6523	0.00	0.8653
0.00	0.5809	0.12	-0.3306	0.50	-0.4325
0.12	-0.6042	0.50	-0.8178	2.00	-0.8434
0.50	-1.0062	1.12	-1.0830	4.46	-0.9276
1.12	-1.1939	2.00	-1.0922	9.22	-0.7277
2.00	-1.3528	3.11	-1.1406	23.47	-0.4496
3.11	-1.3952	4.46	-1.1870	53.33	-0.3398
4.46	-1.3956	6.62	-1.1878	100.00	-0.1987
6.62	-1.4197	9.22	-1.1310		
9.22	-1.3696	13.18	-1.0617		
13.18	-1.3406	17.92	-0.7815		
17.92	-1.2414	23.47	-0.4563		
23.47	-1.1347	31.39	-0.4576		
31.39	-0.4860	41.06	-0.4223		
41.06	-0.3460	53.33	-0.3788		
53.33	-0.3262	70.92	-0.3262		
70.92	-0.3258	86.46	-0.2970		
86.46	-0.2883	100.00	-0.2164		
100.00	-0.2140	109.85	-0.1615		
109.85	-0.1648				

M = 0.768

mfr = 0.651 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6121	-15.26	0.4827	-6.25	0.4934
-6.25	0.9306	-3.00	1.0156	-3.00	0.9145
-3.00	1.1081	-1.62	1.1293	-1.62	1.0578
-1.62	1.1570	-0.71	1.1489	-0.71	1.1517
-0.71	1.1041	-0.17	1.0515	-0.17	1.1177
-0.17	0.9096	0.00	0.6439	0.00	0.9416
0.00	0.5237	0.12	-0.3392	0.50	-0.2531
0.12	-0.6973	0.50	-0.8507	2.00	-0.6563
0.50	-1.0639	1.12	-1.0797	4.46	-0.6702
1.12	-1.3373	2.00	-1.1039	9.22	-0.5686
2.00	-1.4225	3.11	-1.1686	23.47	-0.3839
3.11	-1.4634	4.46	-1.2067	53.33	-0.3154
4.46	-1.4931	6.62	-1.1699	100.00	-0.1917
6.62	-1.4823	9.22	-1.1457		
9.22	-1.4437	13.18	-1.0692		
13.18	-1.3989	17.92	-0.7591		
17.92	-1.3626	23.47	-0.4796		
23.47	-1.2161	31.39	-0.4596		
31.39	-0.8866	41.06	-0.4322		
41.06	-0.3846	53.33	-0.3869		
53.33	-0.3224	70.92	-0.3355		
70.92	-0.3154	86.46	-0.2998		
86.46	-0.2834	100.00	-0.2188		
100.00	-0.2142	109.85	-0.1650		
109.85	-0.1686				

Table 8. Continued

(d) Concluded

M = 0.770

mfr = 0.694 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3438	-15.26	0.3126	-6.25	0.5115
-6.25	0.7143	-3.00	0.9525	-3.00	0.9599
-3.00	0.9581	-1.62	1.0904	-1.62	1.0859
-1.62	1.1178	-0.71	1.1552	-0.71	1.1555
-0.71	1.1580	-0.17	1.1053	-0.17	1.0854
-0.17	1.0702	0.00	0.7801	0.00	0.8429
0.00	0.8319	0.12	-0.1621	0.50	-0.5099
0.12	-0.2278	0.50	-0.5833	2.00	-0.9071
0.50	-0.5697	1.12	-0.8834	4.46	-1.0371
1.12	-0.8294	2.00	-0.8817	9.22	-1.0405
2.00	-0.9841	3.11	-0.9843	23.47	-0.4829
3.11	-0.9745	4.46	-1.0259	53.33	-0.3662
4.46	-1.0145	6.62	-0.9809	100.00	-0.1969
6.62	-1.0487	9.22	-0.9888		
9.22	-0.9985	13.18	-0.7796		
13.18	-0.9117	17.92	-0.5016		
17.92	-0.5412	23.47	-0.4891		
23.47	-0.4592	31.39	-0.4394		
31.39	-0.4407	41.06	-0.4042		
41.06	-0.4107	53.33	-0.3656		
53.33	-0.3798	70.92	-0.3213		
70.92	-0.3224	86.46	-0.2787		
86.46	-0.2841	100.00	-0.2048		
100.00	-0.2100	109.85	-0.1508		
109.85	-0.1553				

M = 0.768

mfr = 0.745 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.0900	-15.26	0.0933	-6.25	0.3095
-6.25	0.5721	-3.00	0.8276	-3.00	0.8519
-3.00	0.8568	-1.62	1.0248	-1.62	1.0310
-1.62	1.0524	-0.71	1.1414	-0.71	1.1437
-0.71	1.1508	-0.17	1.1440	-0.17	1.1314
-0.17	1.1286	0.00	0.8875	0.00	0.9491
0.00	0.9404	0.12	0.0783	0.50	-0.2644
0.12	-0.0128	0.50	-0.2945	2.00	-0.7227
0.50	-0.3226	1.12	-0.5401	4.46	-0.7619
1.12	-0.5300	2.00	-0.6996	9.22	-0.6875
2.00	-0.7404	3.11	-0.7556	23.47	-0.4419
3.11	-0.7297	4.46	-0.7686	53.33	-0.3483
4.46	-0.8427	6.62	-0.6917	100.00	-0.1909
6.62	-0.7513	9.22	-0.7339		
9.22	-0.7378	13.18	-0.4979		
13.18	-0.5150	17.92	-0.5321		
17.92	-0.5565	23.47	-0.4603		
23.47	-0.4472	31.39	-0.4018		
31.39	-0.4200	41.06	-0.3726		
41.06	-0.3895	53.33	-0.3447		
53.33	-0.3565	70.92	-0.2969		
70.92	-0.3103	86.46	-0.2751		
86.46	-0.2739	100.00	-0.1944		
100.00	-0.1969	109.85	-0.1430		
109.85	-0.1489				

M = 0.770

mfr = 0.745 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.1876	-15.26	0.0712	-6.25	0.2386
-6.25	0.6059	-3.00	0.8204	-3.00	0.7884
-3.00	0.9169	-1.62	1.0138	-1.62	0.9950
-1.62	1.0888	-0.71	1.1417	-0.71	1.1322
-0.71	1.1533	-0.17	1.1438	-0.17	1.1451
-0.17	1.1121	0.00	0.8975	0.00	0.9955
0.00	0.8840	0.12	0.0837	0.50	-0.1455
0.12	-0.0573	0.50	-0.3274	2.00	-0.4545
0.50	-0.4816	1.12	-0.5545	4.46	-0.6170
1.12	-0.7546	2.00	-0.6262	9.22	-0.5711
2.00	-0.8662	3.11	-0.7308	23.47	-0.3849
3.11	-0.8903	4.46	-0.7991	53.33	-0.3165
4.46	-0.9975	6.62	-0.6499	100.00	-0.1828
6.62	-0.9786	9.22	-0.7429		
9.22	-0.9537	13.18	-0.5062		
13.18	-0.8078	17.92	-0.5357		
17.92	-0.5369	23.47	-0.4725		
23.47	-0.4719	31.39	-0.4039		
31.39	-0.4430	41.06	-0.3826		
41.06	-0.4215	53.33	-0.3431		
53.33	-0.3770	70.92	-0.3014		
70.92	-0.3176	86.46	-0.2775		
86.46	-0.2776	100.00	-0.1992		
100.00	-0.2060	109.85	-0.1435		
109.85	-0.1517				

M = 0.768

mfr = 0.744 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2207	-15.26	0.0719	-6.25	0.1569
-6.25	0.6578	-3.00	0.8468	-3.00	0.7331
-3.00	0.9438	-1.62	1.0220	-1.62	0.9175
-1.62	1.1138	-0.71	1.1415	-0.71	1.1049
-0.71	1.1553	-0.17	1.1436	-0.17	1.1527
-0.17	1.0710	0.00	0.8963	0.00	1.0471
0.00	0.8317	0.12	0.0844	0.50	0.0578
0.12	-0.2579	0.50	-0.2960	2.00	-0.3711
0.50	-0.6010	1.12	-0.5295	4.46	-0.4422
1.12	-0.8640	2.00	-0.6791	9.22	-0.4293
2.00	-1.0112	3.11	-0.7822	23.47	-0.3323
3.11	-1.0700	4.46	-0.8149	53.33	-0.3052
4.46	-1.1053	6.62	-0.6552	100.00	-0.1790
6.62	-1.0990	9.22	-0.7655		
9.22	-1.0778	13.18	-0.5165		
13.18	-1.0279	17.92	-0.5261		
17.92	-0.6739	23.47	-0.4602		
23.47	-0.4162	31.39	-0.4129		
31.39	-0.4423	41.06	-0.3881		
41.06	-0.4315	53.33	-0.3507		
53.33	-0.3880	70.92	-0.3088		
70.92	-0.3248	86.46	-0.2823		
86.46	-0.2813	100.00	-0.2073		
100.00	-0.2050	109.85	-0.1466		
109.85	-0.1502				

M = 0.769

mfr = 0.746 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2861	-15.26	0.0785	-6.25	0.0708
-6.25	0.7086	-3.00	0.8322	-3.00	0.6533
-3.00	0.9836	-1.62	1.0290	-1.62	0.8703
-1.62	1.1230	-0.71	1.1409	-0.71	1.0706
-0.71	1.1544	-0.17	1.1417	-0.17	1.1539
-0.17	1.0457	0.00	0.8812	0.00	1.1097
0.00	0.7681	0.12	0.0818	0.50	0.2392
0.12	-0.3491	0.50	-0.3184	2.00	-0.1860
0.50	-0.7278	1.12	-0.5314	4.46	-0.3067
1.12	-0.9433	2.00	-0.6700	9.22	-0.3238
2.00	-1.1325	3.11	-0.7506	23.47	-0.2729
3.11	-1.1827	4.46	-0.8074	53.33	-0.2687
4.46	-1.2340	6.62	-0.7046	100.00	-0.1665
6.62	-1.2147	9.22	-0.7565		
9.22	-1.2392	13.18	-0.5151		
13.18	-1.1565	17.92	-0.5439		
17.92	-1.0984	23.47	-0.4695		
23.47	-0.6706	31.39	-0.4132		
31.39	-0.3855	41.06	-0.3871		
41.06	-0.4212	53.33	-0.3536		
53.33	-0.3922	70.92	-0.3140		
70.92	-0.3267	86.46	-0.2831		
86.46	-0.2840	100.00	-0.2094		
100.00	-0.2115	109.85	-0.1532		
109.85	-0.1553				

M = 0.770

mfr = 0.792 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	-0.1789	-15.26	-0.1951	-6.25	0.1155
-6.25	0.3943	-3.00	0.7019	-3.00	0.7336
-3.00	0.7371	-1.62	0.9282	-1.62	0.9450
-1.62	0.9622	-0.71	1.1081	-0.71	1.1014
-0.71	1.1294	-0.17	1.1542	-0.17	1.1538
-0.17	1.1552	0.00	0.9894	0.00	1.0408
0.00	1.0109	0.12	0.2898	0.50	-0.0403
0.12	0.2984	0.50	-0.0802	2.00	-0.4951
0.50	0.0135	1.12	-0.3039	4.46	-0.5198
1.12	-0.3622	2.00	-0.4356	9.22	-0.5752
2.00	-0.5570	3.11	-0.5019	23.47	-0.4210
3.11	-0.5050	4.46	-0.5506	53.33	-0.3280
4.46	-0.6330	6.62	-0.4990	100.00	-0.1872
6.62	-0.5346	9.22	-0.5902		
9.22	-0.6163	13.18	-0.4331		
13.18	-0.4581	17.92	-0.4777		
17.92	-0.4813	23.47	-0.4035		
23.47	-0.3930	31.39	-0.3590		
31.39	-0.3811	41.06	-0.3399		
41.06	-0.3592	53.33	-0.3160		
53.33	-0.3325	70.92	-0.2829		
70.92	-0.2843	86.46	-0.2590		
86.46	-0.2512	100.00	-0.1846		
100.00	-0.1863	109.85	-0.1307		
109.85	-0.1363				

Table 8. Continued

(e) M = 0.79

M = 0.792

mfr = 0.271 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.1346	-15.26	1.1339	-6.25	1.1645
-6.25	1.1658	-3.00	1.1099	-3.00	1.0957
-3.00	1.0891	-1.62	0.9721	-1.62	0.9716
-1.62	0.9479	-0.71	0.7248	-0.71	0.7126
-0.71	0.7172	-0.17	0.4072	-0.17	0.3046
-0.17	0.3180	0.00	-0.3255	0.00	-0.2518
0.00	-0.2746	0.12	-1.1786	0.50	-0.9978
0.12	-1.1063	0.50	-1.1381	2.00	-1.1498
0.50	-1.2422	1.12	-0.7869	4.46	-1.1554
1.12	-1.0905	2.00	-0.9361	9.22	-1.2704
2.00	-1.1120	3.11	-1.0159	23.47	-1.1121
3.11	-0.9389	4.46	-0.9774	53.33	-0.8632
4.46	-0.8265	6.62	-0.9585	100.00	-0.5862
6.62	-0.9949	9.22	-0.9120		
9.22	-0.9606	13.18	-0.8202		
13.18	-0.9986	17.92	-0.8475		
17.92	-1.1244	23.47	-0.9345		
23.47	-1.0876	31.39	-1.0050		
31.39	-1.0491	41.06	-0.9473		
41.06	-0.9567	53.33	-0.8813		
53.33	-0.8943	70.92	-0.7850		
70.92	-0.7601	86.46	-0.7721		
86.46	-0.6517	100.00	-0.7069		
100.00	-0.5907	109.85	-0.5467		
109.85	-0.5597				

M = 0.791

mfr = 0.432 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.9877	-15.26	0.9777	-6.25	1.0641
-6.25	1.1294	-3.00	1.1684	-3.00	1.1679
-3.00	1.1663	-1.62	1.1255	-1.62	1.1266
-1.62	1.1161	-0.71	0.9773	-0.71	0.9783
-0.71	0.9625	-0.17	0.7267	-0.17	0.6349
-0.17	0.6704	0.00	0.1028	0.00	0.2201
0.00	0.1603	0.12	-0.9579	0.50	-1.4085
0.12	-1.0100	0.50	-1.4153	2.00	-1.5981
0.50	-1.3208	1.12	-1.5848	4.46	-1.6504
1.12	-1.5404	2.00	-1.6090	9.22	-1.5636
2.00	-1.6019	3.11	-1.6500	23.47	-1.3469
3.11	-1.6355	4.46	-1.6500	53.33	-0.6654
4.46	-1.6262	6.62	-1.5969	100.00	-0.1631
6.62	-1.6087	9.22	-1.5563		
9.22	-1.5537	13.18	-1.4861		
13.18	-1.5078	17.92	-1.4197		
17.92	-1.4213	23.47	-1.3337		
23.47	-1.3165	31.39	-1.2551		
31.39	-1.2672	41.06	-1.1444		
41.06	-1.1241	53.33	-0.6296		
53.33	-0.5948	70.92	-0.2725		
70.92	-0.2872	86.46	-0.2034		
86.46	-0.1913	100.00	-0.1766		
100.00	-0.1649	109.85	-0.1367		
109.85	-0.1377				

M = 0.792

mfr = 0.492 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8911	-15.26	0.8853	-6.25	0.9957
-6.25	1.0814	-3.00	1.1604	-3.00	1.1631
-3.00	1.1617	-1.62	1.1555	-1.62	1.1585
-1.62	1.1514	-0.71	1.0556	-0.71	1.0599
-0.71	1.0360	-0.17	0.8442	-0.17	0.7758
-0.17	0.7757	0.00	0.2842	0.00	0.3725
0.00	0.3354	0.12	-0.8268	0.50	-1.2604
0.12	-0.8656	0.50	-1.2733	2.00	-1.4485
0.50	-1.2148	1.12	-1.4597	4.46	-1.5099
1.12	-1.4214	2.00	-1.4637	9.22	-1.4437
2.00	-1.4689	3.11	-1.4971	23.47	-1.2576
3.11	-1.4864	4.46	-1.5216	53.33	-0.4253
4.46	-1.4903	6.62	-1.4545	100.00	-0.1959
6.62	-1.4807	9.22	-1.4269		
9.22	-1.4432	13.18	-1.3587		
13.18	-1.3808	17.92	-1.2901		
17.92	-1.3143	23.47	-1.2432		
23.47	-1.1965	31.39	-1.1285		
31.39	-1.1544	41.06	-1.0393		
41.06	-1.0716	53.33	-0.3795		
53.33	-0.4158	70.92	-0.2361		
70.92	-0.2359	86.46	-0.2478		
86.46	-0.2452	100.00	-0.1989		
100.00	-0.1988	109.85	-0.1545		
109.85	-0.1545				

M = 0.792

mfr = 0.541 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7985	-15.26	0.7819	-6.25	0.9062
-6.25	1.0264	-3.00	1.1373	-3.00	1.1431
-3.00	1.1444	-1.62	1.1665	-1.62	1.1679
-1.62	1.1655	-0.71	1.1089	-0.71	1.0961
-0.71	1.0887	-0.17	0.9344	-0.17	0.8771
-0.17	0.8852	0.00	0.4275	0.00	0.5160
0.00	0.5036	0.12	-0.6370	0.50	-1.1308
0.12	-0.7153	0.50	-1.0897	2.00	-1.3413
0.50	-1.0360	1.12	-1.3320	4.46	-1.3858
1.12	-1.2906	2.00	-1.3678	9.22	-1.3489
2.00	-1.3667	3.11	-1.3979	23.47	-1.1725
3.11	-1.3943	4.46	-1.4132	53.33	-0.2815
4.46	-1.4025	6.62	-1.3613	100.00	-0.2171
6.62	-1.4043	9.22	-1.3031		
9.22	-1.3657	13.18	-1.2730		
13.18	-1.3083	17.92	-1.1982		
17.92	-1.2098	23.47	-1.1585		
23.47	-1.1264	31.39	-1.0671		
31.39	-1.0586	41.06	-0.7058		
41.06	-0.8773	53.33	-0.2805		
53.33	-0.2948	70.92	-0.2960		
70.92	-0.2823	86.46	-0.2897		
86.46	-0.2741	100.00	-0.2172		
100.00	-0.2115	109.85	-0.1657		
109.85	-0.1611				

M = 0.794

mfr = 0.592 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6719	-15.26	0.6556	-6.25	0.8049
-6.25	0.9331	-3.00	1.0956	-3.00	1.1082
-3.00	1.1108	-1.62	1.1631	-1.62	1.1635
-1.62	1.1664	-0.71	1.1407	-0.71	1.1405
-0.71	1.1328	-0.17	1.0109	-0.17	0.9623
-0.17	0.9728	0.00	0.5681	0.00	0.6400
0.00	0.6045	0.12	-0.4532	0.50	-0.9638
0.12	-0.5366	0.50	-0.9484	2.00	-1.1704
0.50	-0.9079	1.12	-1.1256	4.46	-1.2838
1.12	-1.1197	2.00	-1.2014	9.22	-1.2282
2.00	-1.2174	3.11	-1.2582	23.47	-1.0562
3.11	-1.2784	4.46	-1.2626	53.33	-0.3254
4.46	-1.2888	6.62	-1.2398	100.00	-0.2176
6.62	-1.2488	9.22	-1.1986		
9.22	-1.2667	13.18	-1.1592		
13.18	-1.1708	17.92	-1.0812		
17.92	-1.1382	23.47	-1.0226		
23.47	-1.0291	31.39	-0.9202		
31.39	-0.9075	41.06	-0.3254		
41.06	-0.3950	53.33	-0.3246		
53.33	-0.3344	70.92	-0.3212		
70.92	-0.3116	86.46	-0.2962		
86.46	-0.2859	100.00	-0.2206		
100.00	-0.2138	109.85	-0.1645		
109.85	-0.1589				

M = 0.793

mfr = 0.648 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5155	-15.26	0.4980	-6.25	0.6496
-6.25	0.8364	-3.00	1.0299	-3.00	1.0517
-3.00	1.0519	-1.62	1.1410	-1.62	1.1385
-1.62	1.1542	-0.71	1.1645	-0.71	1.1650
-0.71	1.1645	-0.17	1.0695	-0.17	1.0362
-0.17	1.0378	0.00	0.6834	0.00	0.7669
0.00	0.7423	0.12	-0.3006	0.50	-0.6700
0.12	-0.3294	0.50	-0.7755	2.00	-0.9769
0.50	-0.7178	1.12	-0.9709	4.46	-1.1461
1.12	-0.9287	2.00	-0.9793	9.22	-1.1076
2.00	-1.0501	3.11	-1.0462	23.47	-0.8144
3.11	-1.1176	4.46	-1.0815	53.33	-0.3825
4.46	-1.1283	6.62	-1.0888	100.00	-0.2209
6.62	-1.1101	9.22	-1.0670		
9.22	-1.1286	13.18	-1.0274		
13.18	-1.0374	17.92	-0.9427		
17.92	-0.9859	23.47	-0.7931		
23.47	-0.8455	31.39	-0.3850		
31.39	-0.6832	41.06	-0.3955		
41.06	-0.3537	53.33	-0.3833		
53.33	-0.3651	70.92	-0.3378		
70.92	-0.3319	86.46	-0.3002		
86.46	-0.2998	100.00	-0.2186		
100.00	-0.2195	109.85	-0.1605		
109.85	-0.1563				

Table 8. Continued

(e) Concluded

M = 0.793

mfr = 0.695 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	0.3665	-15.26	0.3261	-6.25	0.5222
-6.25	0.7238	-3.00	0.9471	-3.00	0.9682
-3.00	0.9799	-1.62	1.1087	-1.62	1.0995
-1.62	1.1248	-0.71	1.1654	-0.71	1.1671
-0.71	1.1679	-0.17	1.1215	-0.17	1.1003
-0.17	1.0943	0.00	0.7819	0.00	0.8799
0.00	0.8464	0.12	-0.1097	0.50	-0.4644
0.12	-0.1551	0.50	-0.5538	2.00	-0.8135
0.50	-0.5140	1.12	-0.8179	4.46	-0.9861
1.12	-0.7623	2.00	-0.7938	9.22	-0.9258
2.00	-0.9027	3.11	-0.9222	23.47	-0.4370
3.11	-0.9144	4.46	-0.9551	53.33	-0.3813
4.46	-1.0073	6.62	-0.9612	100.00	-0.2051
6.62	-0.9756	9.22	-0.9202		
9.22	-1.0020	13.18	-0.8573		
13.18	-0.9114	17.92	-0.7196		
17.92	-0.8326	23.47	-0.4600		
23.47	-0.4130	31.39	-0.4178		
31.39	-0.3958	41.06	-0.4111		
41.06	-0.4245	53.33	-0.3717		
53.33	-0.3848	70.92	-0.3236		
70.92	-0.3227	86.46	-0.2868		
86.46	-0.2851	100.00	-0.2056		
100.00	-0.2087	109.85	-0.1491		
109.85	-0.1508				

M = 0.792

mfr = 0.744 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	0.0996	-15.26	0.0774	-6.25	0.3210
-6.25	0.5583	-3.00	0.8402	-3.00	0.8735
-3.00	0.8855	-1.62	1.0421	-1.62	1.0162
-1.62	1.0614	-0.71	1.1580	-0.71	1.1457
-0.71	1.1544	-0.17	1.1552	-0.17	1.1375
-0.17	1.1358	0.00	0.9315	0.00	0.9712
0.00	0.9592	0.12	0.1234	0.50	-0.1407
0.12	0.0149	0.50	-0.2252	2.00	-0.6797
0.50	-0.2786	1.12	-0.5103	4.46	-0.8112
1.12	-0.4676	2.00	-0.6213	9.22	-0.6982
2.00	-0.6703	3.11	-0.7670	23.47	-0.4609
3.11	-0.7558	4.46	-0.7602	53.33	-0.3659
4.46	-0.7727	6.62	-0.7634	100.00	-0.1890
6.62	-0.8167	9.22	-0.7485		
9.22	-0.7913	13.18	-0.6488		
13.18	-0.7078	17.92	-0.5176		
17.92	-0.5335	23.47	-0.4560		
23.47	-0.4407	31.39	-0.4357		
31.39	-0.4171	41.06	-0.3933		
41.06	-0.4114	53.33	-0.3673		
53.33	-0.3652	70.92	-0.3199		
70.92	-0.3115	86.46	-0.2830		
86.46	-0.2772	100.00	-0.2029		
100.00	-0.1995	109.85	-0.1492		
109.85	-0.1446				

M = 0.792

mfr = 0.793 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.1551	-15.26	-0.1921	-6.25	0.1093
-6.25	0.3950	-3.00	0.7009	-3.00	0.7356
-3.00	0.7608	-1.62	0.9570	-1.62	0.9493
-1.62	0.9908	-0.71	1.1266	-0.71	1.1250
-0.71	1.1379	-0.17	1.1643	-0.17	1.1647
-0.17	1.1639	0.00	1.0180	0.00	1.0660
0.00	1.0410	0.12	0.3097	0.50	0.0099
0.12	0.2533	0.50	-0.0511	2.00	-0.4439
0.50	-0.0824	1.12	-0.2923	4.46	-0.5791
1.12	-0.3434	2.00	-0.4391	9.22	-0.5590
2.00	-0.4802	3.11	-0.5409	23.47	-0.4122
3.11	-0.5815	4.46	-0.5642	53.33	-0.3417
4.46	-0.5750	6.62	-0.4833	100.00	-0.1833
6.62	-0.5202	9.22	-0.6326		
9.22	-0.6463	13.18	-0.4363		
13.18	-0.4439	17.92	-0.4866		
17.92	-0.5277	23.47	-0.4158		
23.47	-0.4017	31.39	-0.3813		
31.39	-0.3996	41.06	-0.3653		
41.06	-0.3742	53.33	-0.3321		
53.33	-0.3484	70.92	-0.2944		
70.92	-0.2986	86.46	-0.2692		
86.46	-0.2653	100.00	-0.1875		
100.00	-0.1901	109.85	-0.1342		
109.85	-0.1332				

Table 8. Continued

(f) M = 0.82

M = 0.817

mfr = 0.295 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.1292	-15.26	1.1306	-6.25	1.1645
-6.25	1.1778	-3.00	1.1359	-3.00	1.1200
-3.00	1.1237	-1.62	1.0189	-1.62	1.0219
-1.62	0.9969	-0.71	0.7980	-0.71	0.7873
-0.71	0.7798	-0.17	0.4824	-0.17	0.3777
-0.17	0.3993	0.00	-0.2286	0.00	-0.1304
0.00	-0.1836	0.12	-1.0861	0.50	-1.5114
0.12	-1.1283	0.50	-1.5087	2.00	-1.7118
0.50	-1.4552	1.12	-1.6682	4.46	-1.7613
1.12	-1.6209	2.00	-1.7204	9.22	-1.6667
2.00	-1.7068	3.11	-1.7490	23.47	-1.4759
3.11	-1.7470	4.46	-1.7586	53.33	-1.1942
4.46	-1.7443	6.62	-1.7204	100.00	-0.3846
6.62	-1.7130	9.22	-1.6767		
9.22	-1.6680	13.18	-1.6169		
13.18	-1.6215	17.92	-1.5365		
17.92	-1.5456	23.47	-1.4673		
23.47	-1.4617	31.39	-1.3651		
31.39	-1.3730	41.06	-1.2592		
41.06	-1.2658	53.33	-1.1648		
53.33	-1.1695	70.92	-0.6079		
70.92	-0.6318	86.46	-0.5355		
86.46	-0.5284	100.00	-0.4444		
100.00	-0.4214	109.85	-0.3533		
109.85	-0.3276				

M = 0.817

mfr = 0.432 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.9955	-15.26	0.9961	-6.25	1.0775
-6.25	1.1421	-3.00	1.1792	-3.00	1.1770
-3.00	1.1780	-1.62	1.1398	-1.62	1.1401
-1.62	1.1317	-0.71	1.0042	-0.71	0.9954
-0.71	0.9887	-0.17	0.7694	-0.17	0.6917
-0.17	0.6812	0.00	0.1555	0.00	0.2577
0.00	0.2173	0.12	-0.8715	0.50	-1.3004
0.12	-0.9344	0.50	-1.3205	2.00	-1.5081
0.50	-1.2301	1.12	-1.4752	4.46	-1.5553
1.12	-1.4228	2.00	-1.5166	9.22	-1.4567
2.00	-1.4817	3.11	-1.5480	23.47	-1.2757
3.11	-1.5367	4.46	-1.5561	53.33	-1.0181
4.46	-1.5385	6.62	-1.4997	100.00	-0.1363
6.62	-1.4969	9.22	-1.4543		
9.22	-1.4769	13.18	-1.3906		
13.18	-1.4068	17.92	-1.3248		
17.92	-1.3447	23.47	-1.2622		
23.47	-1.2260	31.39	-1.1996		
31.39	-1.1709	41.06	-1.1165		
41.06	-1.0759	53.33	-1.0072		
53.33	-1.0054	70.92	-0.5057		
70.92	-0.5351	86.46	-0.2717		
86.46	-0.2712	100.00	-0.1371		
100.00	-0.1262	109.85	-0.0838		
109.85	-0.0825				

M = 0.819

mfr = 0.491 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.9088	-15.26	0.8976	-6.25	0.9992
-6.25	1.0915	-3.00	1.1744	-3.00	1.1734
-3.00	1.1769	-1.62	1.1697	-1.62	1.1638
-1.62	1.1653	-0.71	1.0764	-0.71	1.0775
-0.71	1.0547	-0.17	0.8715	-0.17	0.8030
-0.17	0.8396	0.00	0.3311	0.00	0.4153
0.00	0.3978	0.12	-0.7388	0.50	-1.1805
0.12	-0.8131	0.50	-1.1535	2.00	-1.3521
0.50	-1.1032	1.12	-1.3498	4.46	-1.4123
1.12	-1.3233	2.00	-1.3595	9.22	-1.3425
2.00	-1.3716	3.11	-1.3908	23.47	-1.1574
3.11	-1.3922	4.46	-1.4131	53.33	-0.9383
4.46	-1.4032	6.62	-1.3595	100.00	-0.1244
6.62	-1.3881	9.22	-1.3205		
9.22	-1.3497	13.18	-1.2835		
13.18	-1.3032	17.92	-1.2171		
17.92	-1.2539	23.47	-1.1709		
23.47	-1.1475	31.39	-1.0744		
31.39	-1.0922	41.06	-0.9985		
41.06	-1.0099	53.33	-0.9320		
53.33	-0.9659	70.92	-0.3788		
70.92	-0.3895	86.46	-0.1982		
86.46	-0.1918	100.00	-0.1399		
100.00	-0.1241	109.85	-0.1102		
109.85	-0.0960				

M = 0.819

mfr = 0.544 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7994	-15.26	0.7989	-6.25	0.9304
-6.25	1.0367	-3.00	1.1448	-3.00	1.1557
-3.00	1.1579	-1.62	1.1783	-1.62	1.1779
-1.62	1.1804	-0.71	1.1233	-0.71	1.1179
-0.71	1.1077	-0.17	0.9600	-0.17	0.8916
-0.17	0.8878	0.00	0.4416	0.00	0.5542
0.00	0.5324	0.12	-0.5785	0.50	-1.0143
0.12	-0.6246	0.50	-1.0135	2.00	-1.2607
0.50	-0.9493	1.12	-1.2194	4.46	-1.2780
1.12	-1.1861	2.00	-1.2660	9.22	-1.2518
2.00	-1.2798	3.11	-1.2976	23.47	-1.1157
3.11	-1.2918	4.46	-1.3066	53.33	-0.8805
4.46	-1.3025	6.62	-1.2707	100.00	-0.1747
6.62	-1.2960	9.22	-1.2256		
9.22	-1.2489	13.18	-1.1754		
13.18	-1.2125	17.92	-1.1446		
17.92	-1.1456	23.47	-1.0759		
23.47	-1.0684	31.39	-1.0270		
31.39	-1.0337	41.06	-0.9493		
41.06	-0.9806	53.33	-0.8753		
53.33	-0.9085	70.92	-0.2437		
70.92	-0.2862	86.46	-0.2184		
86.46	-0.2010	100.00	-0.1830		
100.00	-0.1678	109.85	-0.1384		
109.85	-0.1318				

M = 0.816

mfr = 0.543 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8454	-15.26	0.8073	-6.25	0.8941
-6.25	1.0599	-3.00	1.1534	-3.00	1.1438
-3.00	1.1672	-1.62	1.1805	-1.62	1.1802
-1.62	1.1744	-0.71	1.1191	-0.71	1.1362
-0.71	1.0894	-0.17	0.9552	-0.17	0.9312
-0.17	0.8587	0.00	0.4744	0.00	0.6071
0.00	0.4653	0.12	-0.5767	0.50	-0.9724
0.12	-0.7708	0.50	-1.0119	2.00	-1.1428
0.50	-1.0286	1.12	-1.2225	4.46	-1.2276
1.12	-1.2737	2.00	-1.2639	9.22	-1.1884
2.00	-1.3487	3.11	-1.3026	23.47	-1.0320
3.11	-1.3467	4.46	-1.3155	53.33	-0.4830
4.46	-1.3743	6.62	-1.2840	100.00	-0.1988
6.62	-1.3621	9.22	-1.2361		
9.22	-1.3611	13.18	-1.1818		
13.18	-1.2837	17.92	-1.1486		
17.92	-1.2292	23.47	-1.1041		
23.47	-1.1616	31.39	-1.0209		
31.39	-1.0945	41.06	-0.9595		
41.06	-1.0366	53.33	-0.8819		
53.33	-0.9745	70.92	-0.2406		
70.92	-0.3319	86.46	-0.2152		
86.46	-0.1758	100.00	-0.1748		
100.00	-0.1279	109.85	-0.1405		
109.85	-0.1041				

M = 0.816

mfr = 0.542 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8548	-15.26	0.7987	-6.25	0.8623
-6.25	1.0884	-3.00	1.1478	-3.00	1.1314
-3.00	1.1755	-1.62	1.1775	-1.62	1.1775
-1.62	1.1680	-0.71	1.1195	-0.71	1.1536
-0.71	1.0661	-0.17	0.9465	-0.17	0.9671
-0.17	0.8160	0.00	0.4581	0.00	0.6477
0.00	0.3801	0.12	-0.6031	0.50	-0.8762
0.12	-0.8074	0.50	-1.0111	2.00	-1.1022
0.50	-1.1071	1.12	-1.2440	4.46	-1.1579
1.12	-1.3326	2.00	-1.2707	9.22	-1.0975
2.00	-1.3978	3.11	-1.3075	23.47	-0.9290
3.11	-1.4158	4.46	-1.3168	53.33	-0.2950
4.46	-1.4333	6.62	-1.2625	100.00	-0.2156
6.62	-1.4419	9.22	-1.2347		
9.22	-1.4051	13.18	-1.1909		
13.18	-1.3727	17.92	-1.1517		
17.92	-1.2929	23.47	-1.0871		
23.47	-1.2361	31.39	-1.0301		
31.39	-1.1895	41.06	-0.9558		
41.06	-1.1009	53.33	-0.7678		
53.33	-1.0415	70.92	-0.2593		
70.92	-0.4256	86.46	-0.2500		
86.46	-0.2491	100.00	-0.1907		
100.00	-0.1274	109.85	-0.1434		
109.85	-0.0818				

Table 8. Continued

(f) Continued

M = 0.818

mfr = 0.539 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8867	-15.26	0.8037	-6.25	0.8311
-6.25	1.0993	-3.00	1.1486	-3.00	1.1148
-3.00	1.1783	-1.62	1.1763	-1.62	1.1742
-1.62	1.1550	-0.71	1.1212	-0.71	1.1637
-0.71	1.0407	-0.17	0.9521	-0.17	1.0129
-0.17	0.7728	0.00	0.4531	0.00	0.7136
0.00	0.3257	0.12	-0.5678	0.50	-0.7121
0.12	-0.8608	0.50	-1.0017	2.00	-0.9576
0.50	-1.1797	1.12	-1.2019	4.46	-1.0798
1.12	-1.3841	2.00	-1.2579	9.22	-1.0206
2.00	-1.4529	3.11	-1.3013	23.47	-0.7941
3.11	-1.4840	4.46	-1.3137	53.33	-0.3691
4.46	-1.4998	6.62	-1.2951	100.00	-0.2234
6.62	-1.4850	9.22	-1.2383		
9.22	-1.4591	13.18	-1.1861		
13.18	-1.4180	17.92	-1.1443		
17.92	-1.3714	23.47	-1.0802		
23.47	-1.2751	31.39	-1.0172		
31.39	-1.2331	41.06	-0.9507		
41.06	-1.1591	53.33	-0.8264		
53.33	-0.7627	70.92	-0.2917		
70.92	-0.5305	86.46	-0.2675		
86.46	-0.4124	100.00	-0.2058		
100.00	-0.2689	109.85	-0.1551		
109.85	-0.1262				

M = 0.816

mfr = 0.593 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6970	-15.26	0.6782	-6.25	0.8021
-6.25	0.9640	-3.00	1.1077	-3.00	1.1190
-3.00	1.1187	-1.62	1.1757	-1.62	1.1729
-1.62	1.1791	-0.71	1.1529	-0.71	1.1559
-0.71	1.1493	-0.17	1.0374	-0.17	0.9779
-0.17	0.9756	0.00	0.5824	0.00	0.6678
0.00	0.6338	0.12	-0.3703	0.50	-0.8556
0.12	-0.4562	0.50	-0.8757	2.00	-1.0781
0.50	-0.7964	1.12	-1.0227	4.46	-1.1963
1.12	-1.0020	2.00	-1.1158	9.22	-1.1681
2.00	-1.1548	3.11	-1.1839	23.47	-0.9746
3.11	-1.1869	4.46	-1.1952	53.33	-0.4149
4.46	-1.2124	6.62	-1.1673	100.00	-0.2059
6.62	-1.1807	9.22	-1.1374		
9.22	-1.1697	13.18	-1.1003		
13.18	-1.1142	17.92	-1.0657		
17.92	-1.0745	23.47	-1.0111		
23.47	-0.9923	31.39	-0.9402		
31.39	-0.9647	41.06	-0.8492		
41.06	-0.9133	53.33	-0.2891		
53.33	-0.3768	70.92	-0.2641		
70.92	-0.2520	86.46	-0.2782		
86.46	-0.2682	100.00	-0.2043		
100.00	-0.1995	109.85	-0.1506		
109.85	-0.1464				

M = 0.817

mfr = 0.648 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5288	-15.26	0.5202	-6.25	0.6815
-6.25	0.8511	-3.00	1.0466	-3.00	1.0621
-3.00	1.0657	-1.62	1.1512	-1.62	1.1520
-1.62	1.1617	-0.71	1.1772	-0.71	1.1775
-0.71	1.1734	-0.17	1.0922	-0.17	1.0579
-0.17	1.0568	0.00	0.7054	0.00	0.7931
0.00	0.7537	0.12	-0.2020	0.50	-0.5595
0.12	-0.2536	0.50	-0.7052	2.00	-0.9221
0.50	-0.6314	1.12	-0.9085	4.46	-1.0623
1.12	-0.8306	2.00	-0.9081	9.22	-1.0236
2.00	-0.9889	3.11	-0.9824	23.47	-0.8760
3.11	-1.0313	4.46	-1.0328	53.33	-0.2992
4.46	-1.0782	6.62	-1.0328	100.00	-0.2093
6.62	-1.0930	9.22	-0.9930		
9.22	-1.0706	13.18	-0.9565		
13.18	-1.0332	17.92	-0.9372		
17.92	-0.9454	23.47	-0.8938		
23.47	-0.8668	31.39	-0.7744		
31.39	-0.8558	41.06	-0.4204		
41.06	-0.4642	53.33	-0.3230		
53.33	-0.2928	70.92	-0.3266		
70.92	-0.3136	86.46	-0.3000		
86.46	-0.2939	100.00	-0.2084		
100.00	-0.2074	109.85	-0.1514		
109.85	-0.1512				

M = 0.817

mfr = 0.650 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5670	-15.26	0.5050	-6.25	0.6476
-6.25	0.8810	-3.00	1.0364	-3.00	1.0258
-3.00	1.0875	-1.62	1.1556	-1.62	1.1315
-1.62	1.1704	-0.71	1.1726	-0.71	1.1753
-0.71	1.1643	-0.17	1.0816	-0.17	1.0897
-0.17	1.0178	0.00	0.7126	0.00	0.8654
0.00	0.7357	0.12	-0.2327	0.50	-0.5034
0.12	-0.3840	0.50	-0.6580	2.00	-0.8260
0.50	-0.7248	1.12	-0.8927	4.46	-0.9608
1.12	-0.8910	2.00	-0.9163	9.22	-0.9426
2.00	-1.0843	3.11	-1.0309	23.47	-0.7889
3.11	-1.1568	4.46	-1.0453	53.33	-0.3829
4.46	-1.1271	6.62	-1.0487	100.00	-0.2129
6.62	-1.1478	9.22	-1.0058		
9.22	-1.1416	13.18	-0.9782		
13.18	-1.0894	17.92	-0.9205		
17.92	-1.0499	23.47	-0.8772		
23.47	-0.9740	31.39	-0.8545		
31.39	-0.9344	41.06	-0.5264		
41.06	-0.8976	53.33	-0.3332		
53.33	-0.3012	70.92	-0.3272		
70.92	-0.2681	86.46	-0.3058		
86.46	-0.2575	100.00	-0.2101		
100.00	-0.1999	109.85	-0.1491		
109.85	-0.1475				

M = 0.819

mfr = 0.651 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6108	-15.26	0.4982	-6.25	0.5726
-6.25	0.9099	-3.00	1.0243	-3.00	0.9929
-3.00	1.1035	-1.62	1.1468	-1.62	1.1199
-1.62	1.1785	-0.71	1.1738	-0.71	1.1784
-0.71	1.1528	-0.17	1.0875	-0.17	1.1222
-0.17	0.9978	0.00	0.7089	0.00	0.9092
0.00	0.6607	0.12	-0.2164	0.50	-0.3011
0.12	-0.4079	0.50	-0.6551	2.00	-0.6996
0.50	-0.8056	1.12	-0.8917	4.46	-0.8708
1.12	-1.0223	2.00	-0.9068	9.22	-0.8009
2.00	-1.1345	3.11	-0.9737	23.47	-0.4522
3.11	-1.1823	4.46	-1.0254	53.33	-0.3935
4.46	-1.2085	6.62	-1.0505	100.00	-0.2141
6.62	-1.2105	9.22	-1.0250		
9.22	-1.2153	13.18	-0.9581		
13.18	-1.1604	17.92	-0.8932		
17.92	-1.1049	23.47	-0.8751		
23.47	-1.0175	31.39	-0.7388		
31.39	-1.0267	41.06	-0.3863		
41.06	-0.9614	53.33	-0.3384		
53.33	-0.4354	70.92	-0.3223		
70.92	-0.2090	86.46	-0.3109		
86.46	-0.2393	100.00	-0.2183		
100.00	-0.1681	109.85	-0.1546		
109.85	-0.1303				

M = 0.819

mfr = 0.650 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6437	-15.26	0.5068	-6.25	0.5376
-6.25	0.9452	-3.00	1.0352	-3.00	0.9523
-3.00	1.1271	-1.62	1.1514	-1.62	1.0831
-1.62	1.1790	-0.71	1.1741	-0.71	1.1776
-0.71	1.1370	-0.17	1.0914	-0.17	1.1433
-0.17	0.9514	0.00	0.7258	0.00	0.9609
0.00	0.6099	0.12	-0.2124	0.50	-0.1622
0.12	-0.5484	0.50	-0.6878	2.00	-0.5758
0.50	-0.8952	1.12	-0.8952	4.46	-0.6928
1.12	-1.0894	2.00	-0.9129	9.22	-0.5847
2.00	-1.2292	3.11	-0.9937	23.47	-0.4348
3.11	-1.2667	4.46	-1.0427	53.33	-0.3680
4.46	-1.2901	6.62	-1.0380	100.00	-0.1973
6.62	-1.2630	9.22	-1.0303		
9.22	-1.2492	13.18	-0.9615		
13.18	-1.2146	17.92	-0.9149		
17.92	-1.1688	23.47	-0.8415		
23.47	-1.1110	31.39	-0.7834		
31.39	-1.1007	41.06	-0.5251		
41.06	-1.0423	53.33	-0.4091		
53.33	-0.8210	70.92	-0.3330		
70.92	-0.2741	86.46	-0.3136		
86.46	-0.1642	100.00	-0.2186		
100.00	-0.1405	109.85	-0.1570		
109.85	-0.1057				

Table 8. Continued

(f) Continued

M = 0.816

mfr = 0.695 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3591	-15.26	0.3408	-6.25	0.5490
-6.25	0.7255	-3.00	0.9647	-3.00	0.9652
-3.00	0.9910	-1.62	1.1185	-1.62	1.1071
-1.62	1.1235	-0.71	1.1746	-0.71	1.1769
-0.71	1.1781	-0.17	1.1390	-0.17	1.1120
-0.17	1.1033	0.00	0.8301	0.00	0.9017
0.00	0.8869	0.12	-0.0256	0.50	-0.4284
0.12	-0.0635	0.50	-0.4330	2.00	-0.7811
0.50	-0.4211	1.12	-0.6980	4.46	-0.9323
1.12	-0.6994	2.00	-0.7333	9.22	-0.8909
2.00	-0.7909	3.11	-0.8625	23.47	-0.7749
3.11	-0.8972	4.46	-0.9017	53.33	-0.3873
4.46	-0.8989	6.62	-0.9191	100.00	-0.2081
6.62	-0.9265	9.22	-0.8439		
9.22	-0.8931	13.18	-0.8392		
13.18	-0.8862	17.92	-0.8408		
17.92	-0.8243	23.47	-0.7325		
23.47	-0.7235	31.39	-0.5032		
31.39	-0.4999	41.06	-0.3850		
41.06	-0.3452	53.33	-0.3769		
53.33	-0.3803	70.92	-0.3303		
70.92	-0.3248	86.46	-0.2996		
86.46	-0.2926	100.00	-0.2078		
100.00	-0.2099	109.85	-0.1464		
109.85	-0.1484				

M = 0.817

mfr = 0.739 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.1602	-15.26	0.1260	-6.25	0.3590
-6.25	0.6012	-3.00	0.8783	-3.00	0.8836
-3.00	0.8960	-1.62	1.0575	-1.62	1.0425
-1.62	1.0883	-0.71	1.1699	-0.71	1.1572
-0.71	1.1741	-0.17	1.1657	-0.17	1.1479
-0.17	1.1476	0.00	0.9242	0.00	0.9865
0.00	0.9596	0.12	0.1175	0.50	-0.2136
0.12	0.0799	0.50	-0.2703	2.00	-0.6619
0.50	-0.2274	1.12	-0.4579	4.46	-0.7705
1.12	-0.5552	2.00	-0.5897	9.22	-0.7382
2.00	-0.6757	3.11	-0.6820	23.47	-0.4928
3.11	-0.6819	4.46	-0.7510	53.33	-0.3854
4.46	-0.7685	6.62	-0.7506	100.00	-0.1962
6.62	-0.7861	9.22	-0.7308		
9.22	-0.7948	13.18	-0.6770		
13.18	-0.7363	17.92	-0.6824		
17.92	-0.6916	23.47	-0.5351		
23.47	-0.6246	31.39	-0.4528		
31.39	-0.4182	41.06	-0.4313		
41.06	-0.4286	53.33	-0.3897		
53.33	-0.3844	70.92	-0.3359		
70.92	-0.3244	86.46	-0.3064		
86.46	-0.2882	100.00	-0.2162		
100.00	-0.2015	109.85	-0.1504		
109.85	-0.1467				

M = 0.818

mfr = 0.739 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2314	-15.26	0.1584	-6.25	0.3520
-6.25	0.6674	-3.00	0.8817	-3.00	0.8588
-3.00	0.9684	-1.62	1.0563	-1.62	1.0182
-1.62	1.1027	-0.71	1.1724	-0.71	1.1569
-0.71	1.1804	-0.17	1.1635	-0.17	1.1681
-0.17	1.1256	0.00	0.9222	0.00	1.0348
0.00	0.9177	0.12	0.1365	0.50	-0.0270
0.12	-0.0470	0.50	-0.2225	2.00	-0.4845
0.50	-0.3858	1.12	-0.4570	4.46	-0.6362
1.12	-0.6017	2.00	-0.5835	9.22	-0.5224
2.00	-0.7549	3.11	-0.7085	23.47	-0.4412
3.11	-0.8103	4.46	-0.7216	53.33	-0.3614
4.46	-0.8599	6.62	-0.7670	100.00	-0.1939
6.62	-0.9037	9.22	-0.7527		
9.22	-0.8851	13.18	-0.6540		
13.18	-0.8749	17.92	-0.6447		
17.92	-0.8141	23.47	-0.5530		
23.47	-0.7380	31.39	-0.4391		
31.39	-0.7064	41.06	-0.4222		
41.06	-0.3496	53.33	-0.3899		
53.33	-0.3816	70.92	-0.3325		
70.92	-0.3292	86.46	-0.2962		
86.46	-0.2962	100.00	-0.2031		
100.00	-0.2070	109.85	-0.1406		
109.85	-0.1482				

M = 0.817

mfr = 0.739 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2605	-15.26	0.1600	-6.25	0.2403
-6.25	0.7198	-3.00	0.8803	-3.00	0.7857
-3.00	0.9761	-1.62	1.0494	-1.62	0.9810
-1.62	1.1370	-0.71	1.1692	-0.71	1.1443
-0.71	1.1809	-0.17	1.1634	-0.17	1.1746
-0.17	1.1109	0.00	0.9232	0.00	1.0726
0.00	0.8797	0.12	0.1191	0.50	0.0632
0.12	-0.1157	0.50	-0.2607	2.00	-0.3894
0.50	-0.4244	1.12	-0.4374	4.46	-0.4246
1.12	-0.6945	2.00	-0.6022	9.22	-0.5107
2.00	-0.8628	3.11	-0.6808	23.47	-0.3692
3.11	-0.9611	4.46	-0.7699	53.33	-0.3316
4.46	-0.9846	6.62	-0.7804	100.00	-0.1928
6.62	-1.0042	9.22	-0.7614		
9.22	-1.0077	13.18	-0.6606		
13.18	-0.9785	17.92	-0.6711		
17.92	-0.9335	23.47	-0.5238		
23.47	-0.8870	31.39	-0.4714		
31.39	-0.8352	41.06	-0.4326		
41.06	-0.5503	53.33	-0.3942		
53.33	-0.3133	70.92	-0.3392		
70.92	-0.3168	86.46	-0.2975		
86.46	-0.2947	100.00	-0.2083		
100.00	-0.2099	109.85	-0.1477		
109.85	-0.1457				

M = 0.817

mfr = 0.740 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3126	-15.26	0.1515	-6.25	0.1677
-6.25	0.7572	-3.00	0.8773	-3.00	0.7196
-3.00	1.0108	-1.62	1.0597	-1.62	0.9191
-1.62	1.1434	-0.71	1.1706	-0.71	1.1027
-0.71	1.1770	-0.17	1.1620	-0.17	1.1756
-0.17	1.0823	0.00	0.9313	0.00	1.1157
0.00	0.8059	0.12	0.1500	0.50	0.2180
0.12	-0.2189	0.50	-0.1939	2.00	-0.2362
0.50	-0.5801	1.12	-0.4401	4.46	-0.2874
1.12	-0.7845	2.00	-0.5581	9.22	-0.3770
2.00	-0.9405	3.11	-0.7201	23.47	-0.3176
3.11	-1.0530	4.46	-0.7349	53.33	-0.3063
4.46	-1.0765	6.62	-0.7383	100.00	-0.1792
6.62	-1.1272	9.22	-0.6942		
9.22	-1.0769	13.18	-0.6647		
13.18	-1.0921	17.92	-0.6212		
17.92	-1.0347	23.47	-0.5720		
23.47	-0.9626	31.39	-0.5018		
31.39	-0.9388	41.06	-0.4475		
41.06	-0.8836	53.33	-0.3922		
53.33	-0.2764	70.92	-0.3335		
70.92	-0.2713	86.46	-0.3064		
86.46	-0.2644	100.00	-0.2191		
100.00	-0.1915	109.85	-0.1625		
109.85	-0.1374				

M = 0.817

mfr = 0.797 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	-0.2242	-15.26	-0.2329	-6.25	0.0673
-6.25	0.3605	-3.00	0.6918	-3.00	0.7232
-3.00	0.7210	-1.62	0.9324	-1.62	0.9249
-1.62	0.9732	-0.71	1.1162	-0.71	1.1148
-0.71	1.1310	-0.17	1.1753	-0.17	1.1765
-0.17	1.1788	0.00	1.0570	0.00	1.0875
0.00	1.0760	0.12	0.4260	0.50	0.1348
0.12	0.4290	0.50	0.0591	2.00	-0.3362
0.50	0.0545	1.12	-0.1700	4.46	-0.4627
1.12	-0.2664	2.00	-0.3307	9.22	-0.5062
2.00	-0.3597	3.11	-0.4491	23.47	-0.3994
3.11	-0.3904	4.46	-0.4546	53.33	-0.3536
4.46	-0.5165	6.62	-0.4340	100.00	-0.1824
6.62	-0.4944	9.22	-0.5811		
9.22	-0.5929	13.18	-0.4472		
13.18	-0.5093	17.92	-0.4720		
17.92	-0.4733	23.47	-0.4107		
23.47	-0.4128	31.39	-0.3920		
31.39	-0.3973	41.06	-0.3701		
41.06	-0.3946	53.33	-0.3507		
53.33	-0.3631	70.92	-0.3042		
70.92	-0.3033	86.46	-0.2790		
86.46	-0.2778	100.00	-0.1904		
100.00	-0.1931	109.85	-0.1293		
109.85	-0.1316				

Table 8. Continued

(f) Concluded

M = 0.819

mfr = 0.806 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.1805	-15.26	-0.2311	-6.25	0.0362
-6.25	0.3974	-3.00	0.6825	-3.00	0.6359
-3.00	0.7773	-1.62	0.9179	-1.62	0.8926
-1.62	0.9885	-0.71	1.1286	-0.71	1.0711
-0.71	1.1581	-0.17	1.1767	-0.17	1.1756
-0.17	1.1715	0.00	1.0548	0.00	1.1170
0.00	1.0251	0.12	0.4324	0.50	0.2336
0.12	0.2614	0.50	0.0922	2.00	-0.2133
0.50	-0.0138	1.12	-0.1599	4.46	-0.3848
1.12	-0.3135	2.00	-0.3024	9.22	-0.4178
2.00	-0.4986	3.11	-0.4561	23.47	-0.3806
3.11	-0.5831	4.46	-0.4952	53.33	-0.3225
4.46	-0.6651	6.62	-0.4418	100.00	-0.1862
6.62	-0.6544	9.22	-0.5893		
9.22	-0.6482	13.18	-0.3922		
13.18	-0.6563	17.92	-0.4728		
17.92	-0.6524	23.47	-0.4109		
23.47	-0.4721	31.39	-0.3988		
31.39	-0.4290	41.06	-0.3814		
41.06	-0.4341	53.33	-0.3520		
53.33	-0.3842	70.92	-0.3060		
70.92	-0.3146	86.46	-0.2849		
86.46	-0.2822	100.00	-0.1921		
100.00	-0.1943	109.85	-0.1307		
109.85	-0.1364				

M = 0.818

mfr = 0.806 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.1292	-15.26	-0.2519	-6.25	-0.0647
-6.25	0.4477	-3.00	0.6744	-3.00	0.5864
-3.00	0.8065	-1.62	0.9395	-1.62	0.8391
-1.62	1.0372	-0.71	1.1166	-0.71	1.0609
-0.71	1.1625	-0.17	1.1756	-0.17	1.1756
-0.17	1.1649	0.00	1.0381	0.00	1.1505
0.00	1.0046	0.12	0.3903	0.50	0.3579
0.12	0.2101	0.50	0.0631	2.00	-0.0654
0.50	-0.1499	1.12	-0.1934	4.46	-0.2492
1.12	-0.4668	2.00	-0.3540	9.22	-0.3218
2.00	-0.6159	3.11	-0.4525	23.47	-0.2674
3.11	-0.6660	4.46	-0.4660	53.33	-0.2717
4.46	-0.7060	6.62	-0.4300	100.00	-0.1666
6.62	-0.7551	9.22	-0.5987		
9.22	-0.7958	13.18	-0.4079		
13.18	-0.7263	17.92	-0.4804		
17.92	-0.7568	23.47	-0.4471		
23.47	-0.6414	31.39	-0.3940		
31.39	-0.5351	41.06	-0.3851		
41.06	-0.4009	53.33	-0.3596		
53.33	-0.3998	70.92	-0.3192		
70.92	-0.3273	86.46	-0.2762		
86.46	-0.2925	100.00	-0.1954		
100.00	-0.2059	109.85	-0.1424		
109.85	-0.1416				

M = 0.819

mfr = 0.805 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.0824	-15.26	-0.2529	-6.25	-0.1096
-6.25	0.5023	-3.00	0.6762	-3.00	0.5472
-3.00	0.8694	-1.62	0.9295	-1.62	0.7988
-1.62	1.0711	-0.71	1.1139	-0.71	1.0310
-0.71	1.1695	-0.17	1.1716	-0.17	1.1670
-0.17	1.1537	0.00	1.0490	0.00	1.1662
0.00	0.9666	0.12	0.4352	0.50	0.4549
0.12	0.0601	0.50	0.0779	2.00	0.0378
0.50	-0.2804	1.12	-0.1771	4.46	-0.1446
1.12	-0.5410	2.00	-0.3504	9.22	-0.1949
2.00	-0.7194	3.11	-0.4364	23.47	-0.2351
3.11	-0.7604	4.46	-0.4549	53.33	-0.2742
4.46	-0.8323	6.62	-0.4224	100.00	-0.1724
6.62	-0.8544	9.22	-0.5865		
9.22	-0.9022	13.18	-0.4124		
13.18	-0.8473	17.92	-0.4766		
17.92	-0.8537	23.47	-0.4240		
23.47	-0.8058	31.39	-0.4123		
31.39	-0.7690	41.06	-0.3953		
41.06	-0.3961	53.33	-0.3582		
53.33	-0.3437	70.92	-0.3085		
70.92	-0.3251	86.46	-0.2875		
86.46	-0.2804	100.00	-0.1955		
100.00	-0.1963	109.85	-0.1367		
109.85	-0.1374				

Table 8. Continued

(g) M = 0.84

M = 0.844

mfr = 0.294 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.1440	-15.26	1.1431	-6.25	1.1804
-6.25	1.1911	-3.00	1.1520	-3.00	1.1419
-3.00	1.1371	-1.62	1.0362	-1.62	1.0430
-1.62	1.0200	-0.71	0.8187	-0.71	0.8097
-0.71	0.7932	-0.17	0.5222	-0.17	0.4294
-0.17	0.4272	0.00	-0.1488	0.00	-0.0986
0.00	-0.1195	0.12	-0.9887	0.50	-1.4104
0.12	-1.0400	0.50	-1.4058	2.00	-1.6085
0.50	-1.3506	1.12	-1.5538	4.46	-1.6431
1.12	-1.5058	2.00	-1.6096	9.22	-1.5549
2.00	-1.5926	3.11	-1.6387	23.47	-1.3984
3.11	-1.6301	4.46	-1.6502	53.33	-1.1236
4.46	-1.6424	6.62	-1.6152	100.00	-0.4617
6.62	-1.6089	9.22	-1.5779		
9.22	-1.5638	13.18	-1.5177		
13.18	-1.5232	17.92	-1.4424		
17.92	-1.4518	23.47	-1.3753		
23.47	-1.3861	31.39	-1.2960		
31.39	-1.2936	41.06	-1.2012		
41.06	-1.2041	53.33	-1.1231		
53.33	-1.1189	70.92	-1.0256		
70.92	-1.0165	86.46	-0.6138		
86.46	-0.8528	100.00	-0.4564		
100.00	-0.4772	109.85	-0.4277		
109.85	-0.4311				

M = 0.842

mfr = 0.429 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.0130	-15.26	1.0082	-6.25	1.0927
-6.25	1.1509	-3.00	1.1928	-3.00	1.1908
-3.00	1.1886	-1.62	1.1563	-1.62	1.1556
-1.62	1.1482	-0.71	1.0197	-0.71	1.0037
-0.71	1.0008	-0.17	0.7749	-0.17	0.7236
-0.17	0.7195	0.00	0.2085	0.00	0.2919
0.00	0.2752	0.12	-0.8018	0.50	-1.2074
0.12	-0.8445	0.50	-1.2189	2.00	-1.4128
0.50	-1.1429	1.12	-1.3825	4.46	-1.4460
1.12	-1.3233	2.00	-1.4045	9.22	-1.3668
2.00	-1.4064	3.11	-1.4251	23.47	-1.2167
3.11	-1.4273	4.46	-1.4329	53.33	-0.9732
4.46	-1.4253	6.62	-1.3885	100.00	-0.3021
6.62	-1.4224	9.22	-1.3694		
9.22	-1.3619	13.18	-1.2974		
13.18	-1.3429	17.92	-1.2338		
17.92	-1.2386	23.47	-1.1790		
23.47	-1.1904	31.39	-1.1091		
31.39	-1.1242	41.06	-1.0229		
41.06	-1.0502	53.33	-0.9595		
53.33	-0.9804	70.92	-0.9037		
70.92	-0.9152	86.46	-0.5657		
86.46	-0.5181	100.00	-0.3234		
100.00	-0.3270	109.85	-0.2458		
109.85	-0.2678				

M = 0.842

mfr = 0.489 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.9162	-15.26	0.9184	-6.25	1.0175
-6.25	1.1077	-3.00	1.1831	-3.00	1.1852
-3.00	1.1871	-1.62	1.1827	-1.62	1.1824
-1.62	1.1772	-0.71	1.0863	-0.71	1.0832
-0.71	1.0733	-0.17	0.8927	-0.17	0.8286
-0.17	0.8183	0.00	0.3813	0.00	0.4479
0.00	0.4381	0.12	-0.6675	0.50	-1.0736
0.12	-0.7103	0.50	-1.0639	2.00	-1.2880
0.50	-1.0224	1.12	-1.2694	4.46	-1.3198
1.12	-1.2182	2.00	-1.2806	9.22	-1.2709
2.00	-1.2920	3.11	-1.3134	23.47	-1.1169
3.11	-1.2873	4.46	-1.3239	53.33	-0.9179
4.46	-1.3229	6.62	-1.2862	100.00	-0.2025
6.62	-1.3063	9.22	-1.2581		
9.22	-1.2634	13.18	-1.2013		
13.18	-1.2308	17.92	-1.1344		
17.92	-1.1607	23.47	-1.1065		
23.47	-1.1058	31.39	-1.0327		
31.39	-1.0463	41.06	-0.9520		
41.06	-0.9772	53.33	-0.9131		
53.33	-0.9489	70.92	-0.8577		
70.92	-0.8761	86.46	-0.3905		
86.46	-0.4057	100.00	-0.2140		
100.00	-0.2006	109.85	-0.1190		
109.85	-0.1275				

M = 0.841

mfr = 0.543 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8175	-15.26	0.8100	-6.25	0.9368
-6.25	1.0433	-3.00	1.1588	-3.00	1.1651
-3.00	1.1692	-1.62	1.1906	-1.62	1.1886
-1.62	1.1887	-0.71	1.1398	-0.71	1.1354
-0.71	1.1258	-0.17	0.9751	-0.17	0.9114
-0.17	0.9175	0.00	0.5081	0.00	0.5718
0.00	0.5632	0.12	-0.4876	0.50	-0.9443
0.12	-0.5983	0.50	-0.9275	2.00	-1.1743
0.50	-0.8650	1.12	-1.1264	4.46	-1.1960
1.12	-1.0831	2.00	-1.1721	9.22	-1.1661
2.00	-1.1766	3.11	-1.2005	23.47	-1.0468
3.11	-1.2069	4.46	-1.2065	53.33	-0.8612
4.46	-1.2032	6.62	-1.1784	100.00	-0.1274
6.62	-1.2032	9.22	-1.1365		
9.22	-1.1680	13.18	-1.1021		
13.18	-1.1253	17.92	-1.0655		
17.92	-1.0714	23.47	-1.0198		
23.47	-0.9789	31.39	-0.9519		
31.39	-0.9652	41.06	-0.8898		
41.06	-0.9263	53.33	-0.8458		
53.33	-0.8747	70.92	-0.7815		
70.92	-0.8148	86.46	-0.2437		
86.46	-0.2751	100.00	-0.1205		
100.00	-0.1246	109.85	-0.0807		
109.85	-0.0760				

M = 0.843

mfr = 0.542 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8433	-15.26	0.8165	-6.25	0.9164
-6.25	1.0671	-3.00	1.1602	-3.00	1.1560
-3.00	1.1758	-1.62	1.1926	-1.62	1.1923
-1.62	1.1870	-0.71	1.1308	-0.71	1.1509
-0.71	1.1057	-0.17	0.9723	-0.17	0.9567
-0.17	0.8929	0.00	0.4946	0.00	0.6356
0.00	0.4909	0.12	-0.4997	0.50	-0.8652
0.12	-0.6806	0.50	-0.9198	2.00	-1.0893
0.50	-0.9618	1.12	-1.1341	4.46	-1.1404
1.12	-1.1771	2.00	-1.1786	9.22	-1.0990
2.00	-1.2266	3.11	-1.2024	23.47	-0.9803
3.11	-1.2691	4.46	-1.2077	53.33	-0.7921
4.46	-1.2831	6.62	-1.1678	100.00	-0.1330
6.62	-1.2691	9.22	-1.1277		
9.22	-1.2436	13.18	-1.1125		
13.18	-1.1987	17.92	-1.0722		
17.92	-1.1296	23.47	-1.0195		
23.47	-1.0781	31.39	-0.9624		
31.39	-1.0179	41.06	-0.8961		
41.06	-0.9837	53.33	-0.8369		
53.33	-0.9381	70.92	-0.7793		
70.92	-0.8864	86.46	-0.2402		
86.46	-0.3453	100.00	-0.1308		
100.00	-0.1928	109.85	-0.0830		
109.85	-0.1293				

M = 0.843

mfr = 0.541 and α = 2.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8817	-15.26	0.8153	-6.25	0.8815
-6.25	1.0806	-3.00	1.1591	-3.00	1.1439
-3.00	1.1877	-1.62	1.1896	-1.62	1.1880
-1.62	1.1804	-0.71	1.1345	-0.71	1.1649
-0.71	1.0863	-0.17	0.9667	-0.17	0.9928
-0.17	0.8294	0.00	0.4861	0.00	0.6959
0.00	0.4371	0.12	-0.5037	0.50	-0.7632
0.12	-0.7210	0.50	-0.9286	2.00	-0.9730
0.50	-1.0284	1.12	-1.1310	4.46	-1.0861
1.12	-1.2390	2.00	-1.1698	9.22	-1.0283
2.00	-1.3078	3.11	-1.2098	23.47	-0.8819
3.11	-1.3195	4.46	-1.2061	53.33	-0.7169
4.46	-1.3175	6.62	-1.1724	100.00	-0.1868
6.62	-1.3364	9.22	-1.1500		
9.22	-1.3019	13.18	-1.1232		
13.18	-1.2736	17.92	-1.0548		
17.92	-1.2188	23.47	-1.0063		
23.47	-1.1596	31.39	-0.9677		
31.39	-1.1204	41.06	-0.9081		
41.06	-1.0530	53.33	-0.8528		
53.33	-0.9985	70.92	-0.8010		
70.92	-0.8586	86.46	-0.2858		
86.46	-0.4136	100.00	-0.1553		
100.00	-0.3462	109.85	-0.0962		
109.85	-0.2229				

Table 8. Continued

(g) Continued

M = 0.842

mfr = 0.595 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6962	-15.26	0.6918	-6.25	0.8263
-6.25	0.9652	-3.00	1.1106	-3.00	1.1310
-3.00	1.1344	-1.62	1.1825	-1.62	1.1827
-1.62	1.1901	-0.71	1.1679	-0.71	1.1709
-0.71	1.1633	-0.17	1.0512	-0.17	1.0162
-0.17	1.0072	0.00	0.6076	0.00	0.6974
0.00	0.6704	0.12	-0.3298	0.50	-0.8028
0.12	-0.4032	0.50	-0.7814	2.00	-1.0179
0.50	-0.7309	1.12	-0.9678	4.46	-1.1085
1.12	-0.9161	2.00	-1.0344	9.22	-1.0741
2.00	-1.0254	3.11	-1.0987	23.47	-0.9517
3.11	-1.1032	4.46	-1.1114	53.33	-0.7881
4.46	-1.1089	6.62	-1.0834	100.00	-0.1423
6.62	-1.0776	9.22	-1.0587		
9.22	-1.1085	13.18	-1.0280		
13.18	-1.0175	17.92	-0.9854		
17.92	-0.9973	23.47	-0.9476		
23.47	-0.9441	31.39	-0.9006		
31.39	-0.9171	41.06	-0.8388		
41.06	-0.8864	53.33	-0.7948		
53.33	-0.7948	70.92	-0.4711		
70.92	-0.5374	86.46	-0.1948		
86.46	-0.1984	100.00	-0.1589		
100.00	-0.1368	109.85	-0.1195		
109.85	-0.0972				

M = 0.843

mfr = 0.652 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5445	-15.26	0.5375	-6.25	0.7070
-6.25	0.8626	-3.00	1.0517	-3.00	1.0719
-3.00	1.0820	-1.62	1.1626	-1.62	1.1602
-1.62	1.1709	-0.71	1.1872	-0.71	1.1867
-0.71	1.1871	-0.17	1.1079	-0.17	1.0726
-0.17	1.0701	0.00	0.7456	0.00	0.8238
0.00	0.8025	0.12	-0.1471	0.50	-0.5018
0.12	-0.1876	0.50	-0.5926	2.00	-0.8440
0.50	-0.5826	1.12	-0.8171	4.46	-0.9852
1.12	-0.7393	2.00	-0.8354	9.22	-0.9501
2.00	-0.9026	3.11	-0.8921	23.47	-0.8559
3.11	-0.9717	4.46	-0.9445	53.33	-0.7005
4.46	-0.9710	6.62	-0.9732	100.00	-0.1868
6.62	-0.9760	9.22	-0.9225		
9.22	-0.9884	13.18	-0.9094		
13.18	-0.9366	17.92	-0.8809		
17.92	-0.9099	23.47	-0.8574		
23.47	-0.8576	31.39	-0.7779		
31.39	-0.8526	41.06	-0.7393		
41.06	-0.7632	53.33	-0.6621		
53.33	-0.7296	70.92	-0.2400		
70.92	-0.2601	86.46	-0.2361		
86.46	-0.2395	100.00	-0.1863		
100.00	-0.1790	109.85	-0.1302		
109.85	-0.1297				

M = 0.843

mfr = 0.649 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6031	-15.26	0.5321	-6.25	0.6509
-6.25	0.9045	-3.00	1.0565	-3.00	1.0422
-3.00	1.0999	-1.62	1.1670	-1.62	1.1484
-1.62	1.1826	-0.71	1.1864	-0.71	1.1909
-0.71	1.1776	-0.17	1.1075	-0.17	1.1105
-0.17	1.0460	0.00	0.7584	0.00	0.8566
0.00	0.7561	0.12	-0.1361	0.50	-0.4155
0.12	-0.2913	0.50	-0.5926	2.00	-0.6942
0.50	-0.6290	1.12	-0.8200	4.46	-0.8875
1.12	-0.8424	2.00	-0.8584	9.22	-0.8711
2.00	-0.9590	3.11	-0.9380	23.47	-0.7367
3.11	-1.0116	4.46	-0.9738	53.33	-0.5212
4.46	-1.0817	6.62	-0.9660	100.00	-0.2038
6.62	-1.0574	9.22	-0.9436		
9.22	-1.0718	13.18	-0.8966		
13.18	-1.0071	17.92	-0.8636		
17.92	-0.9520	23.47	-0.8308		
23.47	-0.9065	31.39	-0.8161		
31.39	-0.8889	41.06	-0.7608		
41.06	-0.8726	53.33	-0.6863		
53.33	-0.8035	70.92	-0.2680		
70.92	-0.3830	86.46	-0.2613		
86.46	-0.1727	100.00	-0.1850		
100.00	-0.1447	109.85	-0.1325		
109.85	-0.1042				

M = 0.843

mfr = 0.650 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6251	-15.26	0.5358	-6.25	0.6287
-6.25	0.9418	-3.00	1.0510	-3.00	1.0098
-3.00	1.1179	-1.62	1.1606	-1.62	1.1154
-1.62	1.1842	-0.71	1.1859	-0.71	1.1893
-0.71	1.1693	-0.17	1.1096	-0.17	1.1416
-0.17	1.0021	0.00	0.7586	0.00	0.9292
0.00	0.6867	0.12	-0.1702	0.50	-0.2918
0.12	-0.3899	0.50	-0.5883	2.00	-0.6417
0.50	-0.7313	1.12	-0.8137	4.46	-0.7789
1.12	-0.9150	2.00	-0.8556	9.22	-0.7273
2.00	-1.0693	3.11	-0.8989	23.47	-0.6833
3.11	-1.0863	4.46	-0.9588	53.33	-0.3677
4.46	-1.1459	6.62	-0.9808	100.00	-0.2076
6.62	-1.1389	9.22	-0.9453		
9.22	-1.1092	13.18	-0.9326		
13.18	-1.0945	17.92	-0.8406		
17.92	-1.0524	23.47	-0.8358		
23.47	-0.9828	31.39	-0.7877		
31.39	-0.9662	41.06	-0.7354		
41.06	-0.9386	53.33	-0.6812		
53.33	-0.9003	70.92	-0.2947		
70.92	-0.6321	86.46	-0.2743		
86.46	-0.2012	100.00	-0.1968		
100.00	-0.1074	109.85	-0.1430		
109.85	-0.0811				

M = 0.842

mfr = 0.650 and α = 3.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.6545	-15.26	0.5342	-6.25	0.5517
-6.25	0.9583	-3.00	1.0411	-3.00	0.9665
-3.00	1.1299	-1.62	1.1626	-1.62	1.0960
-1.62	1.1909	-0.71	1.1832	-0.71	1.1864
-0.71	1.1561	-0.17	1.1094	-0.17	1.1545
-0.17	0.9742	0.00	0.7689	0.00	0.9856
0.00	0.6339	0.12	-0.1389	0.50	-0.2007
0.12	-0.4637	0.50	-0.5794	2.00	-0.5431
0.50	-0.7898	1.12	-0.8115	4.46	-0.6397
1.12	-1.0123	2.00	-0.8788	9.22	-0.6217
2.00	-1.1325	3.11	-0.9185	23.47	-0.4521
3.11	-1.1775	4.46	-0.9256	53.33	-0.4103
4.46	-1.2002	6.62	-0.9570	100.00	-0.2066
6.62	-1.1825	9.22	-0.9417		
9.22	-1.1972	13.18	-0.8941		
13.18	-1.1427	17.92	-0.8638		
17.92	-1.1312	23.47	-0.8414		
23.47	-1.0592	31.39	-0.7839		
31.39	-1.0266	41.06	-0.6886		
41.06	-0.9750	53.33	-0.6200		
53.33	-0.9453	70.92	-0.3763		
70.92	-0.5133	86.46	-0.2983		
86.46	-0.2532	100.00	-0.2010		
100.00	-0.1342	109.85	-0.1402		
109.85	-0.0670				

M = 0.842

mfr = 0.696 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3771	-15.26	0.3658	-6.25	0.5459
-6.25	0.7456	-3.00	0.9689	-3.00	0.9967
-3.00	1.0097	-1.62	1.1226	-1.62	1.1220
-1.62	1.1479	-0.71	1.1887	-0.71	1.1889
-0.71	1.1906	-0.17	1.1524	-0.17	1.1301
-0.17	1.1257	0.00	0.8577	0.00	0.9115
0.00	0.9000	0.12	-0.0218	0.50	-0.3317
0.12	-0.0682	0.50	-0.4145	2.00	-0.7099
0.50	-0.3303	1.12	-0.6612	4.46	-0.8431
1.12	-0.6229	2.00	-0.7046	9.22	-0.8450
2.00	-0.7252	3.11	-0.7862	23.47	-0.7200
3.11	-0.7988	4.46	-0.8341	53.33	-0.4571
4.46	-0.8288	6.62	-0.8413	100.00	-0.2015
6.62	-0.8491	9.22	-0.8375		
9.22	-0.8757	13.18	-0.8184		
13.18	-0.8233	17.92	-0.7630		
17.92	-0.8158	23.47	-0.6923		
23.47	-0.7398	31.39	-0.7198		
31.39	-0.7482	41.06	-0.6686		
41.06	-0.7009	53.33	-0.3656		
53.33	-0.5129	70.92	-0.2914		
70.92	-0.2654	86.46	-0.3066		
86.46	-0.3137	100.00	-0.2020		
100.00	-0.1974	109.85	-0.1435		
109.85	-0.1348				

Table 8. Continued

(g) Continued

M = 0.843

mfr = 0.739 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2022	-15.26	0.1663	-6.25	0.3872
-6.25	0.6361	-3.00	0.8889	-3.00	0.8844
-3.00	0.9034	-1.62	1.0749	-1.62	1.0714
-1.62	1.1008	-0.71	1.1838	-0.71	1.1731
-0.71	1.1862	-0.17	1.1741	-0.17	1.1670
-0.17	1.1700	0.00	0.9179	0.00	0.9888
0.00	0.9859	0.12	0.1879	0.50	-0.1522
0.12	0.1115	0.50	-0.1881	2.00	-0.5406
0.50	-0.1822	1.12	-0.3943	4.46	-0.6993
1.12	-0.4332	2.00	-0.5253	9.22	-0.7094
2.00	-0.5585	3.11	-0.6401	23.47	-0.6540
3.11	-0.6368	4.46	-0.6734	53.33	-0.3696
4.46	-0.6973	6.62	-0.7019	100.00	-0.1982
6.62	-0.7709	9.22	-0.7135		
9.22	-0.7040	13.18	-0.6110		
13.18	-0.7550	17.92	-0.6446		
17.92	-0.6813	23.47	-0.6398		
23.47	-0.6384	31.39	-0.5886		
31.39	-0.6491	41.06	-0.4665		
41.06	-0.6171	53.33	-0.3728		
53.33	-0.3633	70.92	-0.3474		
70.92	-0.3294	86.46	-0.3325		
86.46	-0.3224	100.00	-0.2131		
100.00	-0.1981	109.85	-0.1500		
109.85	-0.1366				

M = 0.843

mfr = 0.742 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.2379	-15.26	0.1683	-6.25	0.3339
-6.25	0.6645	-3.00	0.8843	-3.00	0.8496
-3.00	0.9544	-1.62	1.0759	-1.62	1.0563
-1.62	1.1265	-0.71	1.1820	-0.71	1.1717
-0.71	1.1927	-0.17	1.1764	-0.17	1.1750
-0.17	1.1570	0.00	0.9339	0.00	1.0456
0.00	0.9405	0.12	0.1686	0.50	-0.0692
0.12	0.0291	0.50	-0.1702	2.00	-0.4524
0.50	-0.2588	1.12	-0.4674	4.46	-0.6188
1.12	-0.5863	2.00	-0.5601	9.22	-0.5870
2.00	-0.7081	3.11	-0.6465	23.47	-0.4965
3.11	-0.7783	4.46	-0.6775	53.33	-0.3967
4.46	-0.7840	6.62	-0.7213	100.00	-0.1952
6.62	-0.8106	9.22	-0.6963		
9.22	-0.8415	13.18	-0.6398		
13.18	-0.7968	17.92	-0.6637		
17.92	-0.7467	23.47	-0.6304		
23.47	-0.7557	31.39	-0.5681		
31.39	-0.7340	41.06	-0.4741		
41.06	-0.6758	53.33	-0.4272		
53.33	-0.4888	70.92	-0.3449		
70.92	-0.2805	86.46	-0.3142		
86.46	-0.2839	100.00	-0.1944		
100.00	-0.1966	109.85	-0.1356		
109.85	-0.1354				

M = 0.842

mfr = 0.740 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3122	-15.26	0.1617	-6.25	0.2355
-6.25	0.7040	-3.00	0.8845	-3.00	0.8231
-3.00	1.0015	-1.62	1.0666	-1.62	0.9947
-1.62	1.1475	-0.71	1.1780	-0.71	1.1420
-0.71	1.1902	-0.17	1.1757	-0.17	1.1877
-0.17	1.1202	0.00	0.9542	0.00	1.0820
0.00	0.8785	0.12	0.1814	0.50	0.0915
0.12	-0.0580	0.50	-0.2123	2.00	-0.2580
0.50	-0.3841	1.12	-0.4117	4.46	-0.4964
1.12	-0.6676	2.00	-0.5132	9.22	-0.4573
2.00	-0.7916	3.11	-0.6237	23.47	-0.3678
3.11	-0.8897	4.46	-0.7069	53.33	-0.3836
4.46	-0.9283	6.62	-0.7417	100.00	-0.1936
6.62	-0.9223	9.22	-0.6885		
9.22	-0.9380	13.18	-0.6653		
13.18	-0.9070	17.92	-0.6132		
17.92	-0.8947	23.47	-0.6088		
23.47	-0.8746	31.39	-0.5576		
31.39	-0.8226	41.06	-0.5404		
41.06	-0.7912	53.33	-0.4450		
53.33	-0.7243	70.92	-0.3344		
70.92	-0.2197	86.46	-0.3212		
86.46	-0.2317	100.00	-0.2063		
100.00	-0.1801	109.85	-0.1488		
109.85	-0.1293				

M = 0.843

mfr = 0.740 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.3342	-15.26	0.1651	-6.25	0.1872
-6.25	0.7619	-3.00	0.8891	-3.00	0.7343
-3.00	1.0282	-1.62	1.0739	-1.62	0.9496
-1.62	1.1557	-0.71	1.1792	-0.71	1.1070
-0.71	1.1917	-0.17	1.1774	-0.17	1.1893
-0.17	1.1010	0.00	0.9442	0.00	1.1315
0.00	0.8278	0.12	0.1956	0.50	0.2448
0.12	-0.1495	0.50	-0.1582	2.00	-0.1762
0.50	-0.5273	1.12	-0.4101	4.46	-0.3107
1.12	-0.7313	2.00	-0.5076	9.22	-0.3683
2.00	-0.8863	3.11	-0.6299	23.47	-0.3276
3.11	-0.9602	4.46	-0.6900	53.33	-0.3377
4.46	-1.0023	6.62	-0.6855	100.00	-0.1937
6.62	-0.9851	9.22	-0.6952		
9.22	-1.0053	13.18	-0.6153		
13.18	-0.9729	17.92	-0.6295		
17.92	-0.9681	23.47	-0.5876		
23.47	-0.9219	31.39	-0.5664		
31.39	-0.8856	41.06	-0.5133		
41.06	-0.8684	53.33	-0.4938		
53.33	-0.8364	70.92	-0.3503		
70.92	-0.2433	86.46	-0.3098		
86.46	-0.1718	100.00	-0.1991		
100.00	-0.1352	109.85	-0.1434		
109.85	-0.1029				

M = 0.844

mfr = 0.800 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	-0.1602	-15.26	-0.1873	-6.25	0.1181
-6.25	0.4183	-3.00	0.7366	-3.00	0.7566
-3.00	0.7568	-1.62	0.9636	-1.62	0.9622
-1.62	1.0122	-0.71	1.1296	-0.71	1.1426
-0.71	1.1529	-0.17	1.1899	-0.17	1.1906
-0.17	1.1894	0.00	1.0471	0.00	1.0881
0.00	1.0907	0.12	0.3950	0.50	0.0827
0.12	0.3140	0.50	0.0711	2.00	-0.3257
0.50	0.1253	1.12	-0.1768	4.46	-0.4706
1.12	-0.2305	2.00	-0.3320	9.22	-0.4881
2.00	-0.3154	3.11	-0.4151	23.47	-0.4567
3.11	-0.4140	4.46	-0.4810	53.33	-0.4050
4.46	-0.5019	6.62	-0.4084	100.00	-0.1888
6.62	-0.5696	9.22	-0.5233		
9.22	-0.5508	13.18	-0.5135		
13.18	-0.5888	17.92	-0.4904		
17.92	-0.5498	23.47	-0.4646		
23.47	-0.4489	31.39	-0.4429		
31.39	-0.4623	41.06	-0.4008		
41.06	-0.3947	53.33	-0.3984		
53.33	-0.3960	70.92	-0.3235		
70.92	-0.3201	86.46	-0.3024		
86.46	-0.3075	100.00	-0.1876		
100.00	-0.1925	109.85	-0.1346		
109.85	-0.1293				

M = 0.842

mfr = 0.806 and α = 1.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	-0.1208	-15.26	-0.2031	-6.25	0.0749
-6.25	0.4406	-3.00	0.7235	-3.00	0.7113
-3.00	0.8065	-1.62	0.9749	-1.62	0.9257
-1.62	1.0286	-0.71	1.1389	-0.71	1.1110
-0.71	1.1659	-0.17	1.1878	-0.17	1.1889
-0.17	1.1852	0.00	1.0493	0.00	1.1214
0.00	1.0425	0.12	0.4020	0.50	0.2130
0.12	0.2770	0.50	0.0910	2.00	-0.2151
0.50	-0.0198	1.12	-0.1678	4.46	-0.4044
1.12	-0.2663	2.00	-0.3530	9.22	-0.4369
2.00	-0.4564	3.11	-0.4557	23.47	-0.4036
3.11	-0.5278	4.46	-0.4853	53.33	-0.3717
4.46	-0.6359	6.62	-0.4306	100.00	-0.1876
6.62	-0.6439	9.22	-0.5295		
9.22	-0.6766	13.18	-0.4710		
13.18	-0.6273	17.92	-0.4661		
17.92	-0.6509	23.47	-0.4568		
23.47	-0.5708	31.39	-0.4632		
31.39	-0.5755	41.06	-0.3959		
41.06	-0.4938	53.33	-0.3936		
53.33	-0.3834	70.92	-0.3182		
70.92	-0.3440	86.46	-0.2966		
86.46	-0.3083	100.00	-0.1914		
100.00	-0.1919	109.85	-0.1297		
109.85	-0.1312				

Table 8. Continued

(g) Concluded

M = 0.842

mfr = 0.797 and α = 2.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.0770	-15.26	-0.1915	-6.25	0.0088
-6.25	0.5002	-3.00	0.7160	-3.00	0.6488
-3.00	0.8674	-1.62	0.9723	-1.62	0.8767
-1.62	1.0606	-0.71	1.1379	-0.71	1.0963
-0.71	1.1772	-0.17	1.1887	-0.17	1.1861
-0.17	1.1722	0.00	1.0617	0.00	1.1476
0.00	1.0178	0.12	0.4382	0.50	0.3384
0.12	0.1702	0.50	0.0470	2.00	-0.0745
0.50	-0.1207	1.12	-0.1622	4.46	-0.2316
1.12	-0.3774	2.00	-0.3032	9.22	-0.2980
2.00	-0.5326	3.11	-0.3727	23.47	-0.3115
3.11	-0.6548	4.46	-0.4420	53.33	-0.3272
4.46	-0.7133	6.62	-0.3970	100.00	-0.1821
6.62	-0.7513	9.22	-0.5376		
9.22	-0.7827	13.18	-0.5324		
13.18	-0.7518	17.92	-0.4503		
17.92	-0.7042	23.47	-0.4964		
23.47	-0.6872	31.39	-0.4340		
31.39	-0.7353	41.06	-0.4191		
41.06	-0.6134	53.33	-0.3949		
53.33	-0.3297	70.92	-0.3240		
70.92	-0.3054	86.46	-0.3017		
86.46	-0.2889	100.00	-0.1914		
100.00	-0.1895	109.85	-0.1343		
109.85	-0.1301				

M = 0.842

mfr = 0.804 and α = 3.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.0339	-15.26	-0.1959	-6.25	-0.0439
-6.25	0.5545	-3.00	0.7083	-3.00	0.5936
-3.00	0.8885	-1.62	0.9516	-1.62	0.8313
-1.62	1.0834	-0.71	1.1340	-0.71	1.0497
-0.71	1.1844	-0.17	1.1826	-0.17	1.1826
-0.17	1.1618	0.00	1.0469	0.00	1.1740
0.00	0.9682	0.12	0.4242	0.50	0.4436
0.12	0.0913	0.50	0.0639	2.00	0.0220
0.50	-0.2358	1.12	-0.1513	4.46	-0.1238
1.12	-0.5206	2.00	-0.3058	9.22	-0.2240
2.00	-0.6799	3.11	-0.4225	23.47	-0.2526
3.11	-0.7674	4.46	-0.5080	53.33	-0.2987
4.46	-0.7884	6.62	-0.4503	100.00	-0.1768
6.62	-0.8361	9.22	-0.5414		
9.22	-0.8598	13.18	-0.5489		
13.18	-0.8422	17.92	-0.4709		
17.92	-0.8237	23.47	-0.4945		
23.47	-0.7984	31.39	-0.4630		
31.39	-0.7814	41.06	-0.4386		
41.06	-0.7493	53.33	-0.4113		
53.33	-0.6204	70.92	-0.3302		
70.92	-0.2292	86.46	-0.3044		
86.46	-0.2649	100.00	-0.1980		
100.00	-0.1847	109.85	-0.1323		
109.85	-0.1287				

Table 8. Continued

(h) M = 0.89

M = 0.890

mfr = 0.296 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.1687	-15.26	1.1676	-6.25	1.2005
-6.25	1.2148	-3.00	1.1792	-3.00	1.1682
-3.00	1.1628	-1.62	1.0689	-1.62	1.0698
-1.62	1.0474	-0.71	0.8638	-0.71	0.8549
-0.71	0.8344	-0.17	0.5760	-0.17	0.4881
-0.17	0.5026	0.00	-0.0892	0.00	-0.0064
0.00	-0.0319	0.12	-0.8446	0.50	-1.2420
0.12	-0.8980	0.50	-1.2385	2.00	-1.4293
0.50	-1.1835	1.12	-1.3800	4.46	-1.4662
1.12	-1.3429	2.00	-1.4282	9.22	-1.3913
2.00	-1.4236	3.11	-1.4612	23.47	-1.2416
3.11	-1.4581	4.46	-1.4697	53.33	-1.0189
4.46	-1.4643	6.62	-1.4374	100.00	-0.8840
6.62	-1.4346	9.22	-1.4099		
9.22	-1.4061	13.18	-1.3499		
13.18	-1.3470	17.92	-1.2848		
17.92	-1.3008	23.47	-1.2367		
23.47	-1.2320	31.39	-1.1636		
31.39	-1.1698	41.06	-1.0698		
41.06	-1.0763	53.33	-1.0013		
53.33	-1.0172	70.92	-0.9261		
70.92	-0.9315	86.46	-0.8987		
86.46	-0.9077	100.00	-0.8707		
100.00	-0.8846	109.85	-0.8327		
109.85	-0.8414				

M = 0.892

mfr = 0.431 and α = -0.1°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	1.0430	-15.26	1.0432	-6.25	1.1138
-6.25	1.1778	-3.00	1.2169	-3.00	1.2135
-3.00	1.2153	-1.62	1.1840	-1.62	1.1813
-1.62	1.1700	-0.71	1.0596	-0.71	1.0504
-0.71	1.0393	-0.17	0.8395	-0.17	0.7689
-0.17	0.7778	0.00	0.2953	0.00	0.3893
0.00	0.3599	0.12	-0.6544	0.50	-1.0510
0.12	-0.6926	0.50	-1.0334	2.00	-1.2394
0.50	-0.9916	1.12	-1.2032	4.46	-1.2702
1.12	-1.1611	2.00	-1.2162	9.22	-1.2190
2.00	-1.2232	3.11	-1.2517	23.47	-1.0528
3.11	-1.2569	4.46	-1.2695	53.33	-0.8729
4.46	-1.2638	6.62	-1.2274	100.00	-0.8227
6.62	-1.2432	9.22	-1.2036		
9.22	-1.2117	13.18	-1.1507		
13.18	-1.1748	17.92	-1.0920		
17.92	-1.1137	23.47	-1.0560		
23.47	-1.0450	31.39	-0.9857		
31.39	-1.0076	41.06	-0.9176		
41.06	-0.9132	53.33	-0.8572		
53.33	-0.8898	70.92	-0.8247		
70.92	-0.8340	86.46	-0.8309		
86.46	-0.8196	100.00	-0.8166		
100.00	-0.8134	109.85	-0.7643		
109.85	-0.7697				

M = 0.891

mfr = 0.543 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.8672	-15.26	0.8556	-6.25	0.9697
-6.25	1.0753	-3.00	1.1848	-3.00	1.1902
-3.00	1.1945	-1.62	1.2171	-1.62	1.2163
-1.62	1.2159	-0.71	1.1673	-0.71	1.1641
-0.71	1.1521	-0.17	1.0209	-0.17	0.9740
-0.17	0.9583	0.00	0.5640	0.00	0.6448
0.00	0.6193	0.12	-0.3761	0.50	-0.7887
0.12	-0.4199	0.50	-0.7718	2.00	-0.9763
0.50	-0.7317	1.12	-0.9717	4.46	-1.0547
1.12	-0.9344	2.00	-1.0255	9.22	-1.0111
2.00	-1.0301	3.11	-1.0480	23.47	-0.9229
3.11	-1.0580	4.46	-1.0649	53.33	-0.7796
4.46	-1.0602	6.62	-1.0312	100.00	-0.7468
6.62	-1.0770	9.22	-1.0031		
9.22	-1.0567	13.18	-0.9837		
13.18	-1.0185	17.92	-0.9162		
17.92	-0.9598	23.47	-0.9064		
23.47	-0.8881	31.39	-0.8497		
31.39	-0.8762	41.06	-0.8109		
41.06	-0.8337	53.33	-0.7695		
53.33	-0.7974	70.92	-0.7472		
70.92	-0.7749	86.46	-0.7567		
86.46	-0.7623	100.00	-0.7472		
100.00	-0.7555	109.85	-0.6958		
109.85	-0.7189				

M = 0.892

mfr = 0.595 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.7430	-15.26	0.7310	-6.25	0.8590
-6.25	0.9960	-3.00	1.1412	-3.00	1.1537
-3.00	1.1596	-1.62	1.2101	-1.62	1.2092
-1.62	1.2156	-0.71	1.1968	-0.71	1.1948
-0.71	1.1957	-0.17	1.0798	-0.17	1.0599
-0.17	1.0383	0.00	0.6855	0.00	0.7527
0.00	0.7281	0.12	-0.1993	0.50	-0.6622
0.12	-0.2909	0.50	-0.6319	2.00	-0.8477
0.50	-0.5961	1.12	-0.8080	4.46	-0.9500
1.12	-0.7556	2.00	-0.8896	9.22	-0.9181
2.00	-0.8974	3.11	-0.9447	23.47	-0.8358
3.11	-0.9405	4.46	-0.9627	53.33	-0.7356
4.46	-0.9775	6.62	-0.9472	100.00	-0.7026
6.62	-0.9590	9.22	-0.9051		
9.22	-0.9508	13.18	-0.8805		
13.18	-0.9068	17.92	-0.8470		
17.92	-0.8883	23.47	-0.8284		
23.47	-0.8123	31.39	-0.8097		
31.39	-0.7938	41.06	-0.7595		
41.06	-0.7816	53.33	-0.7250		
53.33	-0.7350	70.92	-0.6792		
70.92	-0.7056	86.46	-0.7107		
86.46	-0.7172	100.00	-0.7052		
100.00	-0.7109	109.85	-0.6003		
109.85	-0.6449				

M = 0.892

mfr = 0.651 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.5913	-15.26	0.5472	-6.25	0.6981
-6.25	0.8867	-3.00	1.0770	-3.00	1.0960
-3.00	1.1067	-1.62	1.1904	-1.62	1.1844
-1.62	1.2062	-0.71	1.2115	-0.71	1.2117
-0.71	1.2109	-0.17	1.1372	-0.17	1.1141
-0.17	1.1114	0.00	0.8123	0.00	0.8880
0.00	0.8535	0.12	-0.0438	0.50	-0.4022
0.12	-0.1108	0.50	-0.4612	2.00	-0.6801
0.50	-0.4381	1.12	-0.6763	4.46	-0.8523
1.12	-0.6052	2.00	-0.7163	9.22	-0.8031
2.00	-0.7405	3.11	-0.7722	23.47	-0.6826
3.11	-0.7759	4.46	-0.7768	53.33	-0.6671
4.46	-0.8685	6.62	-0.8073	100.00	-0.6509
6.62	-0.8468	9.22	-0.8294		
9.22	-0.8604	13.18	-0.8059		
13.18	-0.8214	17.92	-0.7493		
17.92	-0.7912	23.47	-0.7440		
23.47	-0.7615	31.39	-0.7173		
31.39	-0.7333	41.06	-0.6455		
41.06	-0.7158	53.33	-0.6444		
53.33	-0.6724	70.92	-0.6528		
70.92	-0.6576	86.46	-0.6323		
86.46	-0.6576	100.00	-0.6579		
100.00	-0.6718	109.85	-0.3966		
109.85	-0.4188				

M = 0.892

mfr = 0.700 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	CP	X/L	CP	X/L	CP
-15.26	0.4228	-15.26	0.3926	-6.25	0.5959
-6.25	0.7500	-3.00	1.0030	-3.00	1.0293
-3.00	1.0260	-1.62	1.1478	-1.62	1.1491
-1.62	1.1598	-0.71	1.2123	-0.71	1.2131
-0.71	1.2165	-0.17	1.1831	-0.17	1.1688
-0.17	1.1623	0.00	0.9204	0.00	0.9606
0.00	0.9426	0.12	0.1275	0.50	-0.2232
0.12	0.0505	0.50	-0.2471	2.00	-0.5415
0.50	-0.2213	1.12	-0.5407	4.46	-0.7462
1.12	-0.4503	2.00	-0.5292	9.22	-0.7004
2.00	-0.6005	3.11	-0.6459	23.47	-0.6772
3.11	-0.6835	4.46	-0.7043	53.33	-0.6227
4.46	-0.6941	6.62	-0.7039	100.00	-0.6216
6.62	-0.7191	9.22	-0.7089		
9.22	-0.7128	13.18	-0.6994		
13.18	-0.7117	17.92	-0.6579		
17.92	-0.7175	23.47	-0.6311		
23.47	-0.6653	31.39	-0.6450		
31.39	-0.6415	41.06	-0.6171		
41.06	-0.6613	53.33	-0.5922		
53.33	-0.6177	70.92	-0.6028		
70.92	-0.5977	86.46	-0.6146		
86.46	-0.6115	100.00	-0.6259		
100.00	-0.6503	109.85	-0.3372		
109.85	-0.2288				

Table 8. Concluded

(h) Concluded

M = 0.891

mfr = 0.744 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	0.2192	-15.26	0.1996	-6.25	0.4305
-6.25	0.6537	-3.00	0.9131	-3.00	0.9305
-3.00	0.9614	-1.62	1.0968	-1.62	1.0908
-1.62	1.1149	-0.71	1.2004	-0.71	1.1914
-0.71	1.2066	-0.17	1.2078	-0.17	1.1973
-0.17	1.1966	0.00	0.9970	0.00	1.0504
0.00	1.0147	0.12	0.2939	0.50	-0.0728
0.12	0.2220	0.50	-0.1228	2.00	-0.4471
0.50	-0.1091	1.12	-0.2814	4.46	-0.5645
1.12	-0.2785	2.00	-0.4094	9.22	-0.5663
2.00	-0.4716	3.11	-0.5102	23.47	-0.5828
3.11	-0.5275	4.46	-0.5743	53.33	-0.5538
4.46	-0.5890	6.62	-0.5715	100.00	-0.5719
6.62	-0.6206	9.22	-0.5814		
9.22	-0.6589	13.18	-0.6001		
13.18	-0.6243	17.92	-0.5751		
17.92	-0.6461	23.47	-0.5694		
23.47	-0.5309	31.39	-0.5797		
31.39	-0.5978	41.06	-0.5610		
41.06	-0.5761	53.33	-0.5368		
53.33	-0.5771	70.92	-0.5456		
70.92	-0.5475	86.46	-0.5930		
86.46	-0.5730	100.00	-0.5515		
100.00	-0.4911	109.85	-0.1537		
109.85	-0.1345				

M = 0.891

mfr = 0.794 and α = 0.0°

ϕ = 0°		ϕ = 90°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**	**X/L**	**CP**
-15.26	-0.0621	-15.26	-0.0636	-6.25	0.2074
-6.25	0.4915	-3.00	0.7829	-3.00	0.8013
-3.00	0.8263	-1.62	1.0189	-1.62	1.0170
-1.62	1.0570	-0.71	1.1760	-0.71	1.1681
-0.71	1.1853	-0.17	1.2122	-0.17	1.2129
-0.17	1.2124	0.00	1.0801	0.00	1.1300
0.00	1.0885	0.12	0.4179	0.50	0.1439
0.12	0.4160	0.50	0.0746	2.00	-0.2921
0.50	0.1002	1.12	-0.1098	4.46	-0.4166
1.12	-0.1518	2.00	-0.2857	9.22	-0.4585
2.00	-0.2770	3.11	-0.3629	23.47	-0.4666
3.11	-0.3558	4.46	-0.4155	53.33	-0.4750
4.46	-0.4571	6.62	-0.4831	100.00	-0.4109
6.62	-0.4150	9.22	-0.4395		
9.22	-0.4854	13.18	-0.4571		
13.18	-0.4676	17.92	-0.4796		
17.92	-0.5136	23.47	-0.5135		
23.47	-0.4891	31.39	-0.4752		
31.39	-0.4973	41.06	-0.4737		
41.06	-0.4907	53.33	-0.5106		
53.33	-0.5186	70.92	-0.4871		
70.92	-0.5035	86.46	-0.5312		
86.46	-0.5406	100.00	-0.3524		
100.00	-0.4339	109.85	-0.1027		
109.85	-0.1132				

Table 9. Pressure coefficients on cowl F

(a) M = 0.60

M = 0.593

mfr = 0.260 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0762	-11.61	1.0797
-5.81	1.0844	-2.32	0.9171
-3.77	1.0366	0.00	-0.7843
-2.32	0.9372	0.31	-1.1955
-1.02	0.6295	0.63	-1.5760
-0.49	0.3587	1.25	-1.5308
0.00	-0.6338	1.88	-1.7095
0.31	-1.3172	2.50	-1.7722
0.63	-0.8479	3.12	-1.0009
1.25	-0.7902	3.75	-1.0899
1.88	-0.8121	4.38	-0.9721
2.50	-0.7949	5.00	-0.8324
3.12	-0.8697	6.25	-0.8262
3.75	-0.8542	7.50	-0.9706
4.38	-0.8256	8.75	-1.0150
5.00	-0.7804	10.00	-1.0081
6.25	-0.8105	15.00	-1.1069
7.50	-0.7300	17.50	-0.8745
8.75	-0.8448	20.00	-1.1057
10.00	-0.8365	30.00	-1.0459
12.50	-0.7866	50.00	-0.8897
15.00	-0.7930	60.00	-0.7903
20.00	-0.8152	70.00	-0.6675
20.00	-0.8636	80.00	-0.7230
30.00	-0.8765	90.00	-0.5294
40.00	-0.9182	100.00	-0.4253
50.00	-0.8656	110.00	-0.3481
60.00	-0.8814		
70.00	-0.8260		
80.00	-0.7499		
90.00	-0.6349		
100.00	-0.6002		
110.00	-0.5580		

M = 0.594

mfr = 0.261 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0838	-11.61	1.0698
-5.81	1.0789	-2.32	0.9572
-3.77	1.0183	0.00	-0.7049
-2.32	0.9125	0.31	-1.2282
-1.02	0.5770	0.63	-1.6631
-0.49	0.2433	1.25	-1.2253
0.00	-0.6837	1.88	-1.1250
0.31	-1.1446	2.50	-1.1521
0.63	-0.6791	3.12	-1.2740
1.25	-1.2868	3.75	-1.2323
1.88	-0.6713	4.38	-1.2495
2.50	-1.2644	5.00	-1.2516
3.12	-0.6843	6.25	-1.1842
3.75	-1.1306	7.50	-1.2323
4.38	-0.6578	8.75	-1.1842
5.00	-1.3713	10.00	-1.3441
6.25	-0.6858	15.00	-1.2516
7.50	-1.4552	17.50	-1.2452
8.75	-0.7154	20.00	-1.3119
10.00	-1.2644	30.00	-1.1626
12.50	-0.6485	50.00	-0.6817
15.00	-0.6786	60.00	-0.5580
20.00	-0.7034	70.00	-0.4192
20.00	-0.6559	80.00	-0.3708
30.00	-0.6957	90.00	-0.3259
40.00	-0.7398	100.00	-0.2627
50.00	-0.7542	110.00	-0.2231
60.00	-0.7981		
70.00	-0.7487		
80.00	-0.7753		
90.00	-0.7501		
100.00	-0.6780		
110.00	-0.6869		

M = 0.598

mfr = 0.309 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0553	-11.61	1.0553
-5.81	1.0914	-2.32	0.9790
-3.77	1.0720	0.00	-0.6027
-2.32	0.9975	0.31	-1.0598
-1.02	0.7264	0.63	-1.4672
-0.49	0.4967	1.25	-1.4275
0.00	-0.5054	1.88	-1.1261
0.31	-1.2453	2.50	-1.0349
0.63	-1.2572	3.12	-1.0003
1.25	-1.0006	3.75	-1.1983
1.88	-1.0106	4.38	-1.0112
2.50	-1.1251	5.00	-1.0418
3.12	-0.9273	6.25	-1.1206
3.75	-1.1122	7.50	-1.0754
4.38	-1.0461	8.75	-1.0396
5.00	-1.0843	10.00	-1.0986
6.25	-1.0193	15.00	-1.0789
7.50	-1.0637	17.50	-1.1062
8.75	-0.9433	20.00	-1.2297
10.00	-1.1653	30.00	-1.1230
12.50	-0.9764	50.00	-0.8742
15.00	-1.0045	60.00	-0.6980
20.00	-1.0580	70.00	-0.4987
20.00	-1.0849	80.00	-0.4600
30.00	-1.0090	90.00	-0.3347
40.00	-0.9948	100.00	-0.2906
50.00	-0.9108	110.00	-0.2109
60.00	-0.7926		
70.00	-0.6212		
80.00	-0.5172		
90.00	-0.4756		
100.00	-0.3546		
110.00	-0.2764		

M = 0.593

mfr = 0.393 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9885	-11.61	0.9909
-5.81	1.0820	-2.32	1.0405
-3.77	1.0906	0.00	-0.4639
-2.32	1.0557	0.31	-1.9248
-1.02	0.8526	0.63	-2.2331
-0.49	0.6065	1.25	-1.4061
0.00	-0.4296	1.88	-1.9154
0.31	-2.0017	2.50	-1.5734
0.63	-2.0378	3.12	-1.4447
1.25	-2.2007	3.75	-1.5328
1.88	-2.0337	4.38	-1.5543
2.50	-2.0478	5.00	-1.4811
3.12	-1.8900	6.25	-1.6296
3.75	-1.6874	7.50	-1.5710
4.38	-1.7940	8.75	-1.5855
5.00	-1.5783	10.00	-1.5181
6.25	-1.4873	15.00	-1.4190
7.50	-1.4174	17.50	-1.2693
8.75	-1.3516	20.00	-0.9884
10.00	-1.2786	30.00	-0.6584
12.50	-1.2942	50.00	-0.4399
15.00	-1.2672	60.00	-0.4083
20.00	-1.1819	70.00	-0.3491
20.00	-1.1865	80.00	-0.3287
30.00	-0.9710	90.00	-0.2837
40.00	-0.6572	100.00	-0.2311
50.00	-0.5003	110.00	-0.1861
60.00	-0.4258		
70.00	-0.3550		
80.00	-0.3216		
90.00	-0.2790		
100.00	-0.2345		
110.00	-0.2053		

M = 0.594

mfr = 0.451 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9179	-11.61	0.9068
-5.81	1.0539	-2.32	1.0808
-3.77	1.0870	0.00	-0.3369
-2.32	1.0802	0.31	-1.8463
-1.02	0.9173	0.63	-2.2399
-0.49	0.7291	1.25	-2.0642
0.00	-0.2741	1.88	-2.1660
0.31	-1.8410	2.50	-2.0057
0.63	-2.3417	3.12	-2.0768
1.25	-2.2775	3.75	-1.9360
1.88	-2.2170	4.38	-1.8475
2.50	-2.2327	5.00	-1.8059
3.12	-2.1836	6.25	-1.7320
3.75	-2.0345	7.50	-1.5351
4.38	-1.9171	8.75	-1.4580
5.00	-1.8457	10.00	-1.2491
6.25	-1.6804	15.00	-0.8800
7.50	-1.5901	17.50	-0.7358
8.75	-1.4102	20.00	-0.7078
10.00	-1.3768	30.00	-0.5671
12.50	-1.1171	50.00	-0.4416
15.00	-0.9673	60.00	-0.3938
20.00	-0.9230	70.00	-0.3622
20.00	-0.8247	80.00	-0.3179
30.00	-0.5750	90.00	-0.2839
40.00	-0.4963	100.00	-0.2278
50.00	-0.4459	110.00	-0.1887
60.00	-0.3971		
70.00	-0.3611		
80.00	-0.3289		
90.00	-0.2819		
100.00	-0.2279		
110.00	-0.1968		

M = 0.594

mfr = 0.487 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.8578	-11.61	0.8526
-5.81	1.0152	-2.32	1.0895
-3.77	1.0776	0.00	-0.1500
-2.32	1.0887	0.31	-1.6211
-1.02	0.9766	0.63	-1.9954
-0.49	0.8154	1.25	-2.3160
0.00	-0.1532	1.88	-2.2485
0.31	-1.6575	2.50	-2.1532
0.63	-2.2211	3.12	-2.2467
1.25	-2.3457	3.75	-2.0587
1.88	-2.2498	4.38	-1.8549
2.50	-2.2665	5.00	-1.6287
3.12	-2.2660	6.25	-1.5028
3.75	-2.0986	7.50	-1.1777
4.38	-1.9067	8.75	-1.0152
5.00	-1.6799	10.00	-0.9954
6.25	-1.4744	15.00	-0.7494
7.50	-1.1913	17.50	-0.7027
8.75	-1.0468	20.00	-0.6578
10.00	-0.9931	30.00	-0.5510
12.50	-0.8776	50.00	-0.4366
15.00	-0.7821	60.00	-0.3881
20.00	-0.7273	70.00	-0.3449
20.00	-0.6627	80.00	-0.3193
30.00	-0.5525	90.00	-0.2860
40.00	-0.4911	100.00	-0.2194
50.00	-0.4416	110.00	-0.1802
60.00	-0.3901		
70.00	-0.3514		
80.00	-0.3209		
90.00	-0.2840		
100.00	-0.2247		
110.00	-0.1858		

M = 0.596

mfr = 0.489 and α = 1.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.8834	-11.61	0.8167
-5.81	1.0306	-2.32	1.0911
-3.77	1.0860	0.00	-0.0378
-2.32	1.0854	0.31	-1.4341
-1.02	0.9448	0.63	-1.8577
-0.49	0.7493	1.25	-2.2704
0.00	-0.2282	1.88	-2.1073
0.31	-1.7487	2.50	-1.9995
0.63	-2.2788	3.12	-2.1828
1.25	-2.2664	3.75	-1.9175
1.88	-2.2379	4.38	-1.4064
2.50	-2.2446	5.00	-1.2898
3.12	-2.2617	6.25	-1.0378
3.75	-2.0576	7.50	-0.9334
4.38	-1.9518	8.75	-0.9437
5.00	-1.8699	10.00	-0.8202
6.25	-1.6849	15.00	-0.6931
7.50	-1.6155	17.50	-0.6508
8.75	-1.3771	20.00	-0.6107
10.00	-1.3797	30.00	-0.5156
12.50	-1.1755	50.00	-0.4164
15.00	-1.0092	60.00	-0.3683
20.00	-0.9205	70.00	-0.3352
20.00	-0.8184	80.00	-0.3103
30.00	-0.5767	90.00	-0.2708
40.00	-0.5042	100.00	-0.2047
50.00	-0.4536	110.00	-0.1744
60.00	-0.4074		
70.00	-0.3619		
80.00	-0.3283		
90.00	-0.2861		
100.00	-0.2272		
110.00	-0.1932		

M = 0.597

mfr = 0.493 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9043	-11.61	0.7801
-5.81	1.0500	-2.32	1.0851
-3.77	1.0889	0.00	0.0541
-2.32	1.0792	0.31	-1.2649
-1.02	0.9150	0.63	-1.7003
-0.49	0.6904	1.25	-2.1032
0.00	-0.3140	1.88	-1.9564
0.31	-1.9035	2.50	-1.8799
0.63	-2.3365	3.12	-1.8896
1.25	-2.2692	3.75	-1.4202
1.88	-2.1713	4.38	-1.0133
2.50	-2.1635	5.00	-0.9238
3.12	-2.1206	6.25	-0.8250
3.75	-2.0150	7.50	-0.8264
4.38	-1.9439	8.75	-0.9022
5.00	-1.8699	10.00	-0.7713
6.25	-1.7462	15.00	-0.6490
7.50	-1.6033	17.50	-0.5905
8.75	-1.5401	20.00	-0.5685
10.00	-1.4794	30.00	-0.4873
12.50	-1.3510	50.00	-0.3951
15.00	-1.1601	60.00	-0.3662
20.00	-1.1019	70.00	-0.3256
20.00	-0.9860	80.00	-0.2972
30.00	-0.6812	90.00	-0.2670
40.00	-0.5195	100.00	-0.2021
50.00	-0.4628	110.00	-0.1655
60.00	-0.4107		
70.00	-0.3650		
80.00	-0.3353		
90.00	-0.2888		
100.00	-0.2373		
110.00	-0.2027		

Table 9. Continued

(a) Continued

M = 0.596

mfr = 0.491 and α = 3.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9276	-11.61	0.7452
-5.81	1.0614	-2.32	1.0838
-3.77	1.0888	0.00	0.2461
-2.32	1.0711	0.31	-1.0864
-1.02	0.8780	0.63	-1.4051
-0.49	0.6568	1.25	-1.8650
0.00	-0.3825	1.88	-1.6179
0.31	-1.9412	2.50	-1.6004
0.63	-1.8572	3.12	-1.4197
1.25	-1.4703	3.75	-1.0491
1.88	-1.8245	4.38	-0.8428
2.50	-1.4791	5.00	-0.7623
3.12	-1.5164	6.25	-0.7709
3.75	-1.4946	7.50	-0.6874
4.38	-1.7794	8.75	-0.8373
5.00	-1.5791	10.00	-0.6467
6.25	-1.4044	15.00	-0.5440
7.50	-1.5574	17.50	-0.5515
8.75	-1.4215	20.00	-0.4859
10.00	-1.3681	30.00	-0.4482
12.50	-1.3375	50.00	-0.3530
15.00	-1.3054	60.00	-0.3066
20.00	-1.2819	70.00	-0.3008
20.00	-1.2258	80.00	-0.2559
30.00	-0.9443	90.00	-0.2484
40.00	-0.6605	100.00	-0.1799
50.00	-0.4882	110.00	-0.1520
60.00	-0.4230		
70.00	-0.3710		
80.00	-0.3303		
90.00	-0.2493		
100.00	-0.2523		
110.00	-0.2122		

M = 0.595

mfr = 0.530 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7854	-11.61	0.7777
-5.81	0.9727	-2.32	1.0932
-3.77	1.0581	0.00	-0.0173
-2.32	1.0899	0.31	-1.4777
-1.02	1.0117	0.63	-1.8512
-0.49	0.8726	1.25	-2.2703
0.00	0.0070	1.88	-2.1352
0.31	-1.4248	2.50	-2.0793
0.63	-2.0320	3.12	-2.1559
1.25	-2.3372	3.75	-1.9135
1.88	-2.1645	4.38	-1.5540
2.50	-2.1749	5.00	-1.3346
3.12	-2.2362	6.25	-1.0721
3.75	-2.0502	7.50	-0.9607
4.38	-1.5552	8.75	-0.9570
5.00	-1.3145	10.00	-0.8314
6.25	-1.0641	15.00	-0.7180
7.50	-1.0057	17.50	-0.6557
8.75	-0.9045	20.00	-0.6342
10.00	-0.8378	30.00	-0.5324
12.50	-0.8011	50.00	-0.4195
15.00	-0.7152	60.00	-0.3759
20.00	-0.6838	70.00	-0.3352
20.00	-0.6321	80.00	-0.3113
30.00	-0.5308	90.00	-0.2728
40.00	-0.4643	100.00	-0.2099
50.00	-0.4176	110.00	-0.1721
60.00	-0.3823		
70.00	-0.3480		
80.00	-0.3146		
90.00	-0.2743		
100.00	-0.2181		
110.00	-0.1818		

M = 0.596

mfr = 0.593 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.6301	-11.61	0.6278
-5.81	0.8676	-2.32	1.0709
-3.77	0.9926	0.00	0.2446
-2.32	1.0688	0.31	-1.1744
-1.02	1.0701	0.63	-1.4464
-0.49	0.9847	1.25	-2.0228
0.00	0.2491	1.88	-1.7489
0.31	-1.0781	2.50	-1.6184
0.63	-1.5221	3.12	-1.6418
1.25	-2.0343	3.75	-1.2286
1.88	-1.7979	4.38	-0.9200
2.50	-1.7678	5.00	-0.8880
3.12	-1.7232	6.25	-0.8359
3.75	-1.4204	7.50	-0.7752
4.38	-0.9597	8.75	-0.8944
5.00	-0.9264	10.00	-0.7787
6.25	-0.8551	15.00	-0.6537
7.50	-0.8190	17.50	-0.6020
8.75	-0.8014	20.00	-0.5793
10.00	-0.7792	30.00	-0.4910
12.50	-0.7224	50.00	-0.3962
15.00	-0.6357	60.00	-0.3590
20.00	-0.6207	70.00	-0.3259
20.00	-0.5595	80.00	-0.3019
30.00	-0.4844	90.00	-0.2630
40.00	-0.4436	100.00	-0.2025
50.00	-0.3883	110.00	-0.1682
60.00	-0.3575		
70.00	-0.3311		
80.00	-0.2922		
90.00	-0.2633		
100.00	-0.1989		
110.00	-0.1719		

M = 0.597

mfr = 0.650 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.4678	-11.61	0.4759
-5.81	0.7763	-2.32	1.0357
-3.77	0.8992	0.00	0.4383
-2.32	1.0178	0.31	-0.7823
-1.02	1.0907	0.63	-1.0997
-0.49	1.0476	1.25	-1.5466
0.00	0.4590	1.88	-1.4394
0.31	-0.8635	2.50	-1.0935
0.63	-1.1568	3.12	-0.9748
1.25	-1.4026	3.75	-1.0440
1.88	-1.3845	4.38	-0.8989
2.50	-1.2313	5.00	-0.7353
3.12	-1.1548	6.25	-0.7312
3.75	-0.9921	7.50	-0.6901
4.38	-0.8877	8.75	-0.7944
5.00	-0.8167	10.00	-0.6588
6.25	-0.7065	15.00	-0.5748
7.50	-0.6705	17.50	-0.5412
8.75	-0.7369	20.00	-0.4902
10.00	-0.6818	30.00	-0.4439
12.50	-0.6026	50.00	-0.3605
15.00	-0.5766	60.00	-0.3419
20.00	-0.5516	70.00	-0.3008
20.00	-0.5031	80.00	-0.2834
30.00	-0.4476	90.00	-0.2475
40.00	-0.4009	100.00	-0.1924
50.00	-0.3699	110.00	-0.1430
60.00	-0.3389		
70.00	-0.3089		
80.00	-0.2806		
90.00	-0.2442		
100.00	-0.1906		
110.00	-0.1577		

M = 0.596

mfr = 0.651 and α = 1.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.5466	-11.61	0.4181
-5.81	0.8284	-2.32	0.9991
-3.77	0.9354	0.00	0.5850
-2.32	1.0598	0.31	-0.4789
-1.02	1.0879	0.63	-0.7955
-0.49	1.0122	1.25	-1.1848
0.00	0.2968	1.88	-1.0874
0.31	-0.9429	2.50	-0.9419
0.63	-1.3684	3.12	-0.8553
1.25	-1.8099	3.75	-0.8377
1.88	-1.6733	4.38	-0.7290
2.50	-1.5612	5.00	-0.6859
3.12	-1.4862	6.25	-0.5891
3.75	-1.2551	7.50	-0.5399
4.38	-1.0078	8.75	-0.6680
5.00	-0.8745	10.00	-0.5719
6.25	-0.8043	15.00	-0.4987
7.50	-0.7950	17.50	-0.4737
8.75	-0.8260	20.00	-0.4562
10.00	-0.7299	30.00	-0.4039
12.50	-0.6818	50.00	-0.3242
15.00	-0.6607	60.00	-0.3219
20.00	-0.6095	70.00	-0.2690
20.00	-0.5769	80.00	-0.2620
30.00	-0.4943	90.00	-0.2178
40.00	-0.4415	100.00	-0.1847
50.00	-0.3957	110.00	-0.1223
60.00	-0.3616		
70.00	-0.3260		
80.00	-0.2975		
90.00	-0.2619		
100.00	-0.2029		
110.00	-0.1620		

M = 0.596

mfr = 0.649 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.5745	-11.61	0.3699
-5.81	0.8704	-2.32	0.9582
-3.77	0.9901	0.00	0.6490
-2.32	1.0700	0.31	-0.2780
-1.02	1.0737	0.63	-0.5320
-0.49	0.9681	1.25	-0.8598
0.00	0.2236	1.88	-0.8706
0.31	-1.1537	2.50	-0.7651
0.63	-1.5598	3.12	-0.7377
1.25	-2.0957	3.75	-0.6453
1.88	-1.9986	4.38	-0.5789
2.50	-1.9960	5.00	-0.5506
3.12	-1.8791	6.25	-0.5064
3.75	-1.6948	7.50	-0.4866
4.38	-1.2944	8.75	-0.6101
5.00	-0.9895	10.00	-0.4552
6.25	-0.9335	15.00	-0.4361
7.50	-0.9008	17.50	-0.3907
8.75	-0.8962	20.00	-0.3878
10.00	-0.8053	30.00	-0.3692
12.50	-0.7325	50.00	-0.3204
15.00	-0.6968	60.00	-0.3163
20.00	-0.6731	70.00	-0.2646
20.00	-0.6302	80.00	-0.2460
30.00	-0.5311	90.00	-0.2268
40.00	-0.4619	100.00	-0.1691
50.00	-0.4108	110.00	-0.1395
60.00	-0.3777		
70.00	-0.3349		
80.00	-0.3057		
90.00	-0.2631		
100.00	-0.2027		
110.00	-0.1690		

M = 0.595

mfr = 0.709 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.2536	-11.61	0.2757
-5.81	0.6052	-2.32	0.9440
-3.77	0.7824	0.00	0.6198
-2.32	0.9378	0.31	-0.3773
-1.02	1.0820	0.63	-0.7824
-0.49	1.0832	1.25	-0.9955
0.00	0.6664	1.88	-1.0211
0.31	-0.4349	2.50	-0.8793
0.63	-0.7428	3.12	-0.8142
1.25	-1.0482	3.75	-0.7320
1.88	-0.9609	4.38	-0.7073
2.50	-0.8778	5.00	-0.6679
3.12	-0.8214	6.25	-0.5855
3.75	-0.7485	7.50	-0.5695
4.38	-0.6988	8.75	-0.6865
5.00	-0.6848	10.00	-0.5136
6.25	-0.6077	15.00	-0.4950
7.50	-0.5933	17.50	-0.4588
8.75	-0.5762	20.00	-0.4594
10.00	-0.5260	30.00	-0.4006
12.50	-0.4929	50.00	-0.3505
15.00	-0.5036	60.00	-0.3214
20.00	-0.4825	70.00	-0.2969
20.00	-0.4682	80.00	-0.2637
30.00	-0.4111	90.00	-0.2340
40.00	-0.3728	100.00	-0.1828
50.00	-0.3532	110.00	-0.1419
60.00	-0.3221		
70.00	-0.2940		
80.00	-0.2647		
90.00	-0.2413		
100.00	-0.1767		
110.00	-0.1508		

M = 0.594

mfr = 0.769 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.0161	-11.61	0.0289
-5.81	0.3781	-2.32	0.8251
-3.77	0.6087	0.00	0.8147
-2.32	0.8080	0.31	-0.0552
-1.02	1.0411	0.63	-0.3541
-0.49	1.0908	1.25	-0.6777
0.00	0.8212	1.88	-0.6375
0.31	-0.0595	2.50	-0.5853
0.63	-0.3871	3.12	-0.5662
1.25	-0.6669	3.75	-0.5170
1.88	-0.6622	4.38	-0.5123
2.50	-0.6332	5.00	-0.4732
3.12	-0.6051	6.25	-0.4418
3.75	-0.5538	7.50	-0.4206
4.38	-0.4987	8.75	-0.5626
5.00	-0.5117	10.00	-0.4691
6.25	-0.4463	15.00	-0.4130
7.50	-0.4769	17.50	-0.3826
8.75	-0.4422	20.00	-0.3843
10.00	-0.4292	30.00	-0.3528
12.50	-0.4178	50.00	-0.3078
15.00	-0.4203	60.00	-0.2996
20.00	-0.4162	70.00	-0.2710
20.00	-0.3676	80.00	-0.2534
30.00	-0.3710	90.00	-0.2207
40.00	-0.3388	100.00	-0.1680
50.00	-0.3181	110.00	-0.1271
60.00	-0.2897		
70.00	-0.2721		
80.00	-0.2499		
90.00	-0.2193		
100.00	-0.1665		
110.00	-0.1358		

Table 9. Continued

(Concluded)

M = 0.597

mfr = 0.770 and α = 2.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.1731	-11.61	-0.1647
-5.81	0.5448	-2.32	0.6785
-3.77	0.7505	0.00	0.9461
-2.32	0.9102	0.31	0.3065
-1.02	1.0830	0.63	0.0730
-0.49	1.0848	1.25	-0.1954
0.00	0.6156	1.88	-0.2662
0.31	-0.5078	2.50	-0.2453
0.63	-0.7815	3.12	-0.2656
1.25	-1.1281	3.75	-0.2384
1.88	-1.0923	4.38	-0.2479
2.50	-1.0819	5.00	-0.2041
3.12	-0.9466	6.25	-0.2558
3.75	-0.8454	7.50	-0.2337
4.38	-0.7511	8.75	-0.3741
5.00	-0.7933	10.00	-0.2732
6.25	-0.6702	15.00	-0.2778
7.50	-0.6295	17.50	-0.2790
8.75	-0.6336	20.00	-0.2859
10.00	-0.6253	30.00	-0.2720
12.50	-0.5893	50.00	-0.2627
15.00	-0.5524	60.00	-0.2488
20.00	-0.5372	70.00	-0.2308
20.00	-0.5037	80.00	-0.2209
30.00	-0.4341	90.00	-0.1943
40.00	-0.3942	100.00	-0.1455
50.00	-0.3630	110.00	-0.1130
60.00	-0.3331		
70.00	-0.3023		
80.00	-0.2711		
90.00	-0.2366		
100.00	-0.1798		
110.00	-0.1485		

M = 0.595

mfr = 0.834 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.3346	-11.61	-0.3125
-5.81	0.1760	-2.32	0.6462
-3.77	0.3980	0.00	0.9281
-2.32	0.6211	0.31	0.3606
-1.02	0.9592	0.63	0.0629
-0.49	1.0650	1.25	-0.3148
0.00	0.9727	1.88	-0.3211
0.31	0.2935	2.50	-0.3113
0.63	-0.0368	3.12	-0.3718
1.25	-0.3210	3.75	-0.3026
1.88	-0.3531	4.38	-0.3333
2.50	-0.4531	5.00	-0.3207
3.12	-0.3879	6.25	-0.2710
3.75	-0.3169	7.50	-0.3020
4.38	-0.2946	8.75	-0.4325
5.00	-0.3158	10.00	-0.3294
6.25	-0.3164	15.00	-0.3212
7.50	-0.3578	17.50	-0.2914
8.75	-0.3827	20.00	-0.3271
10.00	-0.2951	30.00	-0.3137
12.50	-0.3298	50.00	-0.2896
15.00	-0.3211	60.00	-0.2710
20.00	-0.3272	70.00	-0.2425
20.00	-0.3138	80.00	-0.2250
30.00	-0.3065	90.00	-0.2028
40.00	-0.2979	100.00	-0.1498
50.00	-0.2879	110.00	-0.1155
60.00	-0.2631		
70.00	-0.2518		
80.00	-0.2276		
90.00	-0.2035		
100.00	-0.1536		
110.00	-0.1238		

M = 0.596

mfr = 0.893 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.7201	-11.61	-0.6934
-5.81	-0.1588	-2.32	0.3791
-3.77	0.1444	0.00	1.0233
-2.32	0.4366	0.31	0.5721
-1.02	0.8306	0.63	0.2743
-0.49	0.9934	1.25	-0.0691
0.00	1.0473	1.88	-0.1234
0.31	0.4348	2.50	-0.1563
0.63	0.1662	3.12	-0.0911
1.25	-0.0363	3.75	-0.1255
1.88	-0.0895	4.38	-0.1332
2.50	-0.2118	5.00	-0.1882
3.12	-0.1612	6.25	-0.1618
3.75	-0.1504	7.50	-0.1743
4.38	-0.1499	8.75	-0.2758
5.00	-0.2030	10.00	-0.2504
6.25	-0.1612	15.00	-0.2388
7.50	-0.2206	17.50	-0.2557
8.75	-0.2154	20.00	-0.2580
10.00	-0.2361	30.00	-0.2620
12.50	-0.2454	50.00	-0.2708
15.00	-0.2777	60.00	-0.2411
20.00	-0.2691	70.00	-0.2312
20.00	-0.2667	80.00	-0.2092
30.00	-0.2743	90.00	-0.1952
40.00	-0.2838	100.00	-0.1266
50.00	-0.2701	110.00	-0.1017
60.00	-0.2478		
70.00	-0.2417		
80.00	-0.2179		
90.00	-0.2025		
100.00	-0.1411		
110.00	-0.1178		

Table 9. Continued

(b) M = 0.65

M = 0.644

mfr = 0.262 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1004	-11.61	1.0983
-5.81	1.1008	-2.32	0.9491
-3.77	1.0602	0.00	-0.6032
-2.32	0.9487	0.31	-1.4275
-1.02	0.6566	0.63	-1.5314
-0.49	0.3845	1.25	-1.5840
0.00	-0.6961	1.88	-1.3147
0.31	-1.5867	2.50	-1.4092
0.63	-1.4714	3.12	-1.2337
1.25	-1.4664	3.75	-1.2756
1.88	-1.6348	4.38	-1.1163
2.50	-1.6042	5.00	-0.9232
3.12	-1.2500	6.25	-1.0152
3.75	-1.6148	7.50	-1.1036
4.38	-1.6061	8.75	-1.0995
5.00	-1.4853	10.00	-1.1673
6.25	-0.8778	15.00	-1.1093
7.50	-0.9382	17.50	-1.2238
8.75	-1.5747	20.00	-0.8890
10.00	-1.4124	30.00	-0.9822
12.50	-0.9225	50.00	-0.9657
15.00	-0.9644	60.00	-0.8144
20.00	-1.1809	70.00	-0.7081
20.00	-0.9412	80.00	-0.7505
30.00	-0.8511	90.00	-0.4917
40.00	-0.8996	100.00	-0.4751
50.00	-0.9465	110.00	-0.3549
60.00	-0.8255		
70.00	-0.8144		
80.00	-0.7369		
90.00	-0.6928		
100.00	-0.5605		
110.00	-0.5263		

M = 0.643

mfr = 0.312 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0702	-11.61	1.0702
-5.81	1.1084	-2.32	1.0050
-3.77	1.0818	0.00	-0.4771
-2.32	1.0111	0.31	-1.0292
-1.02	0.7571	0.63	-1.3434
-0.49	0.5147	1.25	-0.9928
0.00	-0.4834	1.88	-0.9192
0.31	-1.4187	2.50	-0.9528
0.63	-1.2816	3.12	-0.9571
1.25	-1.0669	3.75	-0.9387
1.88	-1.0210	4.38	-0.9154
2.50	-1.0697	5.00	-0.9341
3.12	-1.0771	6.25	-0.9810
3.75	-0.9761	7.50	-1.0313
4.38	-1.1326	8.75	-0.9848
5.00	-1.1433	10.00	-0.9283
6.25	-1.0715	15.00	-1.2955
7.50	-1.1053	17.50	-1.0141
8.75	-0.9979	20.00	-0.9959
10.00	-1.1155	30.00	-1.0126
12.50	-1.1655	50.00	-0.9299
15.00	-1.1095	60.00	-0.8067
20.00	-1.1877	70.00	-0.6362
20.00	-1.0602	80.00	-0.5036
30.00	-1.0589	90.00	-0.4362
40.00	-0.9685	100.00	-0.2777
50.00	-0.9076	110.00	-0.2233
60.00	-0.8015		
70.00	-0.5886		
80.00	-0.5827		
90.00	-0.4760		
100.00	-0.3684		
110.00	-0.2616		

M = 0.643

mfr = 0.395 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0026	-11.61	1.0098
-5.81	1.0988	-2.32	1.0647
-3.77	1.1081	0.00	-0.3296
-2.32	1.0706	0.31	-1.7582
-1.02	0.8787	0.63	-2.0626
-0.49	0.6601	1.25	-1.7687
0.00	-0.2870	1.88	-1.8993
0.31	-1.7779	2.50	-1.4380
0.63	-1.9579	3.12	-1.6010
1.25	-2.0129	3.75	-1.6434
1.88	-1.7876	4.38	-1.4150
2.50	-1.9227	5.00	-1.5285
3.12	-1.8278	6.25	-1.4139
3.75	-1.7390	7.50	-1.5971
4.38	-1.7885	8.75	-1.5913
5.00	-1.6969	10.00	-1.5259
6.25	-1.5668	15.00	-1.4239
7.50	-1.5035	17.50	-1.3127
8.75	-1.4568	20.00	-1.2211
10.00	-1.4165	30.00	-0.8162
12.50	-1.2962	50.00	-0.4847
15.00	-1.3407	60.00	-0.4210
20.00	-1.2615	70.00	-0.3672
20.00	-1.1754	80.00	-0.3294
30.00	-0.8880	90.00	-0.2947
40.00	-0.6363	100.00	-0.2419
50.00	-0.5515	110.00	-0.1956
60.00	-0.4248		
70.00	-0.3853		
80.00	-0.3209		
90.00	-0.2902		
100.00	-0.2416		
110.00	-0.2091		

M = 0.643

mfr = 0.451 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.9371	-11.61	0.9377
-5.81	1.0678	-2.32	1.0972
-3.77	1.1064	0.00	-0.1825
-2.32	1.0966	0.31	-1.6049
-1.02	0.9689	0.63	-1.9784
-0.49	0.7596	1.25	-2.0800
0.00	-0.1503	1.88	-2.0391
0.31	-1.5625	2.50	-1.9875
0.63	-2.0475	3.12	-2.0288
1.25	-2.0554	3.75	-1.9319
1.88	-2.0313	4.38	-1.9697
2.50	-2.0040	5.00	-1.8477
3.12	-2.0646	6.25	-1.7136
3.75	-1.9767	7.50	-1.6184
4.38	-1.8850	8.75	-1.5221
5.00	-1.8254	10.00	-1.4171
6.25	-1.6963	15.00	-1.1172
7.50	-1.6199	17.50	-1.0194
8.75	-1.5283	20.00	-0.8811
10.00	-1.4505	30.00	-0.5845
12.50	-1.2779	50.00	-0.4493
15.00	-1.1560	60.00	-0.4017
20.00	-0.8934	70.00	-0.3582
20.00	-1.0063	80.00	-0.3292
30.00	-0.5963	90.00	-0.2909
40.00	-0.5059	100.00	-0.2246
50.00	-0.4453	110.00	-0.1945
60.00	-0.3994		
70.00	-0.3608		
80.00	-0.3277		
90.00	-0.2848		
100.00	-0.2288		
110.00	-0.1964		

M = 0.644

mfr = 0.529 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.8076	-11.61	0.8004
-5.81	0.9993	-2.32	1.1090
-3.77	1.0784	0.00	0.0555
-2.32	1.1088	0.31	-1.2310
-1.02	1.0405	0.63	-1.6221
-0.49	0.9098	1.25	-2.0693
0.00	0.1025	1.88	-2.1724
0.31	-1.2705	2.50	-2.0403
0.63	-1.7646	3.12	-1.9966
1.25	-2.1639	3.75	-1.9936
1.88	-2.1358	4.38	-2.0605
2.50	-2.0458	5.00	-1.9096
3.12	-2.0435	6.25	-1.5551
3.75	-2.0292	7.50	-1.2808
4.38	-2.0536	8.75	-1.1372
5.00	-2.0125	10.00	-0.8767
6.25	-1.5605	15.00	-0.7173
7.50	-1.1763	17.50	-0.6702
8.75	-1.0891	20.00	-0.6340
10.00	-1.0568	30.00	-0.5327
12.50	-0.7561	50.00	-0.4278
15.00	-0.7228	60.00	-0.3922
20.00	-0.6836	70.00	-0.3467
20.00	-0.6475	80.00	-0.3172
30.00	-0.5395	90.00	-0.2790
40.00	-0.4733	100.00	-0.2129
50.00	-0.4339	110.00	-0.1772
60.00	-0.3893		
70.00	-0.3555		
80.00	-0.3237		
90.00	-0.2723		
100.00	-0.2163		
110.00	-0.1831		

M = 0.645

mfr = 0.591 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.6722	-11.61	0.6768
-5.81	0.9232	-2.32	1.0908
-3.77	1.0127	0.00	0.2831
-2.32	1.0956	0.31	-0.9595
-1.02	1.0945	0.63	-1.3705
-0.49	0.9981	1.25	-1.8433
0.00	0.2998	1.88	-1.9876
0.31	-0.9365	2.50	-1.8547
0.63	-1.4040	3.12	-1.7503
1.25	-1.8356	3.75	-1.7054
1.88	-1.9324	4.38	-1.7255
2.50	-1.7941	5.00	-1.3672
3.12	-1.7411	6.25	-0.8480
3.75	-1.6964	7.50	-0.7807
4.38	-1.7706	8.75	-0.8798
5.00	-1.0854	10.00	-0.7667
6.25	-0.8465	15.00	-0.6715
7.50	-0.7792	17.50	-0.6291
8.75	-0.8106	20.00	-0.6111
10.00	-0.7673	30.00	-0.5146
12.50	-0.7179	50.00	-0.4083
15.00	-0.6680	60.00	-0.3742
20.00	-0.6178	70.00	-0.3314
20.00	-0.5776	80.00	-0.2983
30.00	-0.4986	90.00	-0.2663
40.00	-0.4574	100.00	-0.2096
50.00	-0.4101	110.00	-0.1600
60.00	-0.3787		
70.00	-0.3401		
80.00	-0.3029		
90.00	-0.2721		
100.00	-0.2006		
110.00	-0.1712		

M = 0.643

mfr = 0.650 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.5182	-11.61	0.5125
-5.81	0.7920	-2.32	1.0438
-3.77	0.9317	0.00	0.4914
-2.32	1.0497	0.31	-0.5970
-1.02	1.1084	0.63	-0.9631
-0.49	1.0726	1.25	-1.5786
0.00	0.4495	1.88	-1.5376
0.31	-0.5863	2.50	-1.3607
0.63	-1.1505	3.12	-1.2924
1.25	-1.5138	3.75	-1.1116
1.88	-1.5564	4.38	-0.9116
2.50	-1.4435	5.00	-0.8156
3.12	-1.3440	6.25	-0.7364
3.75	-1.2047	7.50	-0.6976
4.38	-1.0231	8.75	-0.8172
5.00	-0.8061	10.00	-0.6856
6.25	-0.7316	15.00	-0.6177
7.50	-0.6982	17.50	-0.5747
8.75	-0.7468	20.00	-0.5379
10.00	-0.6760	30.00	-0.4721
12.50	-0.6429	50.00	-0.3742
15.00	-0.5979	60.00	-0.3550
20.00	-0.5711	70.00	-0.3084
20.00	-0.5321	80.00	-0.2892
30.00	-0.4790	90.00	-0.2514
40.00	-0.4283	100.00	-0.1908
50.00	-0.3828	110.00	-0.1524
60.00	-0.3483		
70.00	-0.3208		
80.00	-0.2918		
90.00	-0.2585		
100.00	-0.1933		
110.00	-0.1610		

M = 0.644

mfr = 0.703 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.3252	-11.61	0.3081
-5.81	0.6460	-2.32	0.9722
-3.77	0.8278	0.00	0.6204
-2.32	0.9659	0.31	-0.3197
-1.02	1.0989	0.63	-0.6997
-0.49	1.0962	1.25	-1.0798
0.00	0.6442	1.88	-1.0350
0.31	-0.3825	2.50	-0.9396
0.63	-0.8352	3.12	-0.8822
1.25	-1.1070	3.75	-0.8091
1.88	-1.0386	4.38	-0.7441
2.50	-1.0298	5.00	-0.7250
3.12	-0.8347	6.25	-0.6183
3.75	-0.7756	7.50	-0.5861
4.38	-0.7243	8.75	-0.7397
5.00	-0.7894	10.00	-0.5737
6.25	-0.6270	15.00	-0.5303
7.50	-0.6196	17.50	-0.4946
8.75	-0.5999	20.00	-0.4645
10.00	-0.5810	30.00	-0.4097
12.50	-0.5668	50.00	-0.3704
15.00	-0.5135	60.00	-0.3155
20.00	-0.4919	70.00	-0.3010
20.00	-0.4956	80.00	-0.2659
30.00	-0.4174	90.00	-0.2405
40.00	-0.4119	100.00	-0.1722
50.00	-0.3544	110.00	-0.1484
60.00	-0.3456		
70.00	-0.2964		
80.00	-0.2989		
90.00	-0.2588		
100.00	-0.1985		
110.00	-0.1434		

Table 9. Continued

(b) Concluded

M = 0.645

mfr = 0.767 and α = 0.0°

ϕ = 0°		**ϕ = 180°**	
X/L	**CP**	**X/L**	**CP**
-11.61	0.0545	-11.61	0.0488
-5.81	0.4659	-2.32	0.8576
-3.77	0.6977	0.00	0.7876
-2.32	0.8331	0.31	-0.0152
-1.02	1.0664	0.63	-0.2889
-0.49	1.1070	1.25	-0.6994
0.00	0.8302	1.88	-0.7024
0.31	-0.0931	2.50	-0.5972
0.63	-0.4406	3.12	-0.5579
1.25	-0.6390	3.75	-0.5806
1.88	-0.7319	4.38	-0.5049
2.50	-0.6946	5.00	-0.4811
3.12	-0.6445	6.25	-0.4599
3.75	-0.5235	7.50	-0.4682
4.38	-0.5125	8.75	-0.6061
5.00	-0.5547	10.00	-0.4558
6.25	-0.5469	15.00	-0.4413
7.50	-0.4832	17.50	-0.4093
8.75	-0.5318	20.00	-0.3913
10.00	-0.4813	30.00	-0.3686
12.50	-0.4483	50.00	-0.3433
15.00	-0.4448	60.00	-0.3098
20.00	-0.4176	70.00	-0.2773
20.00	-0.4118	80.00	-0.2582
30.00	-0.3874	90.00	-0.2277
40.00	-0.3495	100.00	-0.1643
50.00	-0.3379	110.00	-0.1276
60.00	-0.3149		
70.00	-0.2871		
80.00	-0.2580		
90.00	-0.2279		
100.00	-0.1669		
110.00	-0.1380		

M = 0.645

mfr = 0.829 and α = 0.0°

ϕ = 0°		**ϕ = 180°**	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.2612	-11.61	-0.3035
-5.81	0.2368	-2.32	0.6890
-3.77	0.4335	0.00	0.9542
-2.32	0.7098	0.31	0.3001
-1.02	0.9808	0.63	0.0424
-0.49	1.0907	1.25	-0.3102
0.00	0.9526	1.88	-0.3770
0.31	0.2429	2.50	-0.3541
0.63	-0.0171	3.12	-0.3407
1.25	-0.3396	3.75	-0.3309
1.88	-0.3992	4.38	-0.3401
2.50	-0.4180	5.00	-0.3185
3.12	-0.3850	6.25	-0.3098
3.75	-0.3492	7.50	-0.2906
4.38	-0.3873	8.75	-0.4627
5.00	-0.3309	10.00	-0.3711
6.25	-0.3245	15.00	-0.3355
7.50	-0.3240	17.50	-0.3350
8.75	-0.4134	20.00	-0.3500
10.00	-0.3295	30.00	-0.3293
12.50	-0.3268	50.00	-0.2958
15.00	-0.3818	60.00	-0.2854
20.00	-0.3442	70.00	-0.2514
20.00	-0.3309	80.00	-0.2348
30.00	-0.3332	90.00	-0.2147
40.00	-0.3239	100.00	-0.1559
50.00	-0.3139	110.00	-0.1202
60.00	-0.2816		
70.00	-0.2601		
80.00	-0.2410		
90.00	-0.2089		
100.00	-0.1538		
110.00	-0.1218		

M = 0.644

mfr = 0.889 and α = 0.0°

ϕ = 0°		**ϕ = 180°**	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.6570	-11.61	-0.6653
-5.81	-0.0723	-2.32	0.4942
-3.77	0.1825	0.00	1.0559
-2.32	0.4622	0.31	0.5601
-1.02	0.8561	0.63	0.2471
-0.49	1.0272	1.25	-0.0245
0.00	1.0558	1.88	-0.0793
0.31	0.5609	2.50	-0.1876
0.63	0.2684	3.12	-0.1706
1.25	-0.0218	3.75	-0.1042
1.88	-0.1616	4.38	-0.1288
2.50	-0.1556	5.00	-0.1871
3.12	-0.1768	6.25	-0.1646
3.75	-0.1726	7.50	-0.1452
4.38	-0.1542	8.75	-0.3548
5.00	-0.1515	10.00	-0.2487
6.25	-0.1861	15.00	-0.2528
7.50	-0.2293	17.50	-0.2383
8.75	-0.2693	20.00	-0.2860
10.00	-0.2334	30.00	-0.2994
12.50	-0.2527	50.00	-0.2580
15.00	-0.2831	60.00	-0.2668
20.00	-0.2927	70.00	-0.2430
20.00	-0.2674	80.00	-0.2233
30.00	-0.2771	90.00	-0.1969
40.00	-0.2956	100.00	-0.1473
50.00	-0.2826	110.00	-0.1130
60.00	-0.2543		
70.00	-0.2487		
80.00	-0.2342		
90.00	-0.2031		
100.00	-0.1461		
110.00	-0.1175		

Table 9. Continued

(c) M = 0.70

M = 0.696

mfr = 0.261 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1140	-11.61	1.1172
-5.81	1.1215	-2.32	0.9725
-3.77	1.0803	0.00	-0.4691
-2.32	0.9816	0.31	-1.2365
-1.02	0.6884	0.63	-1.1447
-0.49	0.4578	1.25	-1.2996
0.00	-0.4870	1.88	-0.9689
0.31	-1.0297	2.50	-0.9178
0.63	-1.2078	3.12	-1.0158
1.25	-1.2578	3.75	-1.1259
1.88	-1.4649	4.38	-1.1204
2.50	-1.3119	5.00	-1.1101
3.12	-1.3864	6.25	-1.0734
3.75	-1.3529	7.50	-1.1825
4.38	-0.8867	8.75	-0.9805
5.00	-1.1455	10.00	-1.0869
6.25	-1.0627	15.00	-1.1366
7.50	-1.0780	17.50	-1.1366
8.75	-1.3476	20.00	-1.0372
10.00	-1.2760	30.00	-1.0707
12.50	-1.2227	50.00	-0.8682
15.00	-0.8845	60.00	-0.8710
20.00	-1.1653	70.00	-0.7883
20.00	-1.0667	80.00	-0.7047
30.00	-0.9896	90.00	-0.5682
40.00	-0.9553	100.00	-0.4651
50.00	-0.7896	110.00	-0.4651
60.00	-0.8661		
70.00	-0.7396		
80.00	-0.7083		
90.00	-0.6119		
100.00	-0.5248		
110.00	-0.4384		

M = 0.693

mfr = 0.313 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0899	-11.61	1.0889
-5.81	1.1265	-2.32	1.0349
-3.77	1.1035	0.00	-0.3430
-2.32	1.0341	0.31	-1.1017
-1.02	0.7911	0.63	-1.1335
-0.49	0.5393	1.25	-0.8394
0.00	-0.3738	1.88	-0.9579
0.31	-1.3199	2.50	-0.8216
0.63	-1.2571	3.12	-0.8930
1.25	-1.0565	3.75	-0.8277
1.88	-1.1273	4.38	-0.8306
2.50	-0.9991	5.00	-0.8324
3.12	-1.0365	6.25	-0.9540
3.75	-1.0773	7.50	-0.8632
4.38	-1.1044	8.75	-0.9466
5.00	-1.1930	10.00	-0.9292
6.25	-1.1215	15.00	-1.1780
7.50	-1.1872	17.50	-0.8193
8.75	-1.1914	20.00	-1.0611
10.00	-1.1265	30.00	-0.9236
12.50	-1.1219	50.00	-0.8820
15.00	-0.9970	60.00	-0.8585
20.00	-1.1336	70.00	-0.7912
20.00	-1.2184	80.00	-0.6725
30.00	-1.0765	90.00	-0.6230
40.00	-0.9980	100.00	-0.5420
50.00	-0.9121	110.00	-0.3764
60.00	-0.8023		
70.00	-0.6977		
80.00	-0.5351		
90.00	-0.4640		
100.00	-0.3715		
110.00	-0.3299		

M = 0.693

mfr = 0.395 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0250	-11.61	1.0245
-5.81	1.1189	-2.32	1.0836
-3.77	1.1267	0.00	-0.2093
-2.32	1.0955	0.31	-1.5496
-1.02	0.9133	0.63	-1.5924
-0.49	0.7115	1.25	-1.5682
0.00	-0.1699	1.88	-1.6919
0.31	-1.4892	2.50	-1.6434
0.63	-1.6888	3.12	-1.5096
1.25	-1.5332	3.75	-1.5650
1.88	-1.5861	4.38	-1.3141
2.50	-1.6871	5.00	-1.5524
3.12	-1.6019	6.25	-1.4468
3.75	-1.5936	7.50	-1.5729
4.38	-1.4925	8.75	-1.5057
5.00	-1.5782	10.00	-1.4173
6.25	-1.5166	15.00	-1.3879
7.50	-1.4555	17.50	-1.3239
8.75	-1.3674	20.00	-1.2566
10.00	-1.3570	30.00	-0.9748
12.50	-1.3211	50.00	-0.5558
15.00	-1.3034	60.00	-0.4498
20.00	-1.2842	70.00	-0.3763
20.00	-1.2367	80.00	-0.3242
30.00	-1.0492	90.00	-0.2939
40.00	-0.9156	100.00	-0.2320
50.00	-0.6018	110.00	-0.2050
60.00	-0.4926		
70.00	-0.4010		
80.00	-0.3265		
90.00	-0.2766		
100.00	-0.2406		
110.00	-0.2038		

M = 0.695

mfr = 0.448 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.9554	-11.61	0.9666
-5.81	1.0916	-2.32	1.1137
-3.77	1.1237	0.00	-0.0734
-2.32	1.1179	0.31	-1.3559
-1.02	0.9830	0.63	-1.7002
-0.49	0.8172	1.25	-2.0019
0.00	-0.0176	1.88	-2.0750
0.31	-1.3514	2.50	-1.7162
0.63	-1.7549	3.12	-1.8377
1.25	-2.0854	3.75	-2.1151
1.88	-2.1410	4.38	-1.7746
2.50	-2.1700	5.00	-2.0750
3.12	-2.1555	6.25	-2.0191
3.75	-2.1203	7.50	-1.9441
4.38	-2.1190	8.75	-1.9477
5.00	-2.0660	10.00	-1.8817
6.25	-2.0024	15.00	-1.2022
7.50	-1.9701	17.50	-1.1659
8.75	-1.7574	20.00	-0.8196
10.00	-1.8275	30.00	-0.5185
12.50	-1.6661	50.00	-0.4534
15.00	-1.2151	60.00	-0.4228
20.00	-1.0013	70.00	-0.3615
20.00	-0.9506	80.00	-0.3429
30.00	-0.7471	90.00	-0.2937
40.00	-0.4962	100.00	-0.2389
50.00	-0.4725	110.00	-0.1874
60.00	-0.4169		
70.00	-0.3819		
80.00	-0.3331		
90.00	-0.2984		
100.00	-0.2351		
110.00	-0.2052		

M = 0.694

mfr = 0.464 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.9467	-11.61	0.9532
-5.81	1.0763	-2.32	1.1258
-3.77	1.1251	0.00	-0.0384
-2.32	1.1237	0.31	-1.3429
-1.02	1.0012	0.63	-1.6580
-0.49	0.8380	1.25	-2.0052
0.00	-0.0069	1.88	-2.0940
0.31	-1.2643	2.50	-2.1317
0.63	-1.7008	3.12	-2.1413
1.25	-2.0420	3.75	-2.0850
1.88	-2.0972	4.38	-2.0745
2.50	-2.1376	5.00	-2.0514
3.12	-2.1380	6.25	-2.0073
3.75	-2.1018	7.50	-1.9211
4.38	-2.1188	8.75	-1.8714
5.00	-2.0624	10.00	-1.8618
6.25	-2.0299	15.00	-1.1025
7.50	-1.9418	17.50	-0.9983
8.75	-1.8989	20.00	-0.7611
10.00	-1.8715	30.00	-0.4814
12.50	-1.7506	50.00	-0.4469
15.00	-1.5080	60.00	-0.4111
20.00	-0.9152	70.00	-0.3655
20.00	-0.7130	80.00	-0.3376
30.00	-0.4871	90.00	-0.2869
40.00	-0.4827	100.00	-0.2241
50.00	-0.4499	110.00	-0.1781
60.00	-0.4055		
70.00	-0.3692		
80.00	-0.3362		
90.00	-0.2887		
100.00	-0.2278		
110.00	-0.1896		

M = 0.693

mfr = 0.469 and α = 2.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.9779	-11.61	0.8838
-5.81	1.0989	-2.32	1.1265
-3.77	1.1272	0.00	0.1581
-2.32	1.1160	0.31	-1.0611
-1.02	0.9562	0.63	-1.4003
-0.49	0.7598	1.25	-1.8067
0.00	-0.1217	1.88	-1.9119
0.31	-1.4352	2.50	-1.9633
0.63	-1.7272	3.12	-1.9665
1.25	-1.9740	3.75	-1.9058
1.88	-1.7019	4.38	-1.8777
2.50	-1.8346	5.00	-1.8058
3.12	-1.8475	6.25	-1.7821
3.75	-1.8629	7.50	-1.6263
4.38	-1.7310	8.75	-1.7407
5.00	-1.7297	10.00	-1.1770
6.25	-1.5230	15.00	-0.5810
7.50	-1.4876	17.50	-0.5651
8.75	-1.5330	20.00	-0.5726
10.00	-1.4099	30.00	-0.5239
12.50	-1.3470	50.00	-0.4405
15.00	-1.3019	60.00	-0.3753
20.00	-1.2475	70.00	-0.3594
20.00	-1.2242	80.00	-0.3180
30.00	-0.9439	90.00	-0.2872
40.00	-0.7976	100.00	-0.2108
50.00	-0.6131	110.00	-0.1810
60.00	-0.5148		
70.00	-0.3725		
80.00	-0.3409		
90.00	-0.2946		
100.00	-0.2398		
110.00	-0.1982		

M = 0.695

mfr = 0.524 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.8436	-11.61	0.8390
-5.81	1.0173	-2.32	1.1279
-3.77	1.0922	0.00	0.1463
-2.32	1.1267	0.31	-1.0688
-1.02	1.0674	0.63	-1.4909
-0.49	0.9322	1.25	-1.8232
0.00	0.1748	1.88	-1.8982
0.31	-1.0355	2.50	-1.9926
0.63	-1.4696	3.12	-2.0157
1.25	-1.9157	3.75	-1.9651
1.88	-1.9616	4.38	-1.9540
2.50	-1.9715	5.00	-1.8581
3.12	-1.9939	6.25	-1.8520
3.75	-1.9430	7.50	-1.7762
4.38	-1.9355	8.75	-1.7360
5.00	-1.8937	10.00	-1.6905
6.25	-1.8249	15.00	-0.8403
7.50	-1.7437	17.50	-0.5854
8.75	-1.7388	20.00	-0.5476
10.00	-1.6580	30.00	-0.5243
12.50	-1.2985	50.00	-0.4407
15.00	-0.6375	60.00	-0.4004
20.00	-0.5862	70.00	-0.3587
20.00	-0.5478	80.00	-0.3304
30.00	-0.5219	90.00	-0.2789
40.00	-0.4774	100.00	-0.2154
50.00	-0.4389	110.00	-0.1751
60.00	-0.4020		
70.00	-0.3656		
80.00	-0.3324		
90.00	-0.2787		
100.00	-0.2210		
110.00	-0.1840		

M = 0.693

mfr = 0.587 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.6985	-11.61	0.7068
-5.81	0.9321	-2.32	1.1138
-3.77	1.0348	0.00	0.3433
-2.32	1.1124	0.31	-0.7960
-1.02	1.1095	0.63	-1.1688
-0.49	1.0216	1.25	-1.6162
0.00	0.3725	1.88	-1.7698
0.31	-0.8156	2.50	-1.8049
0.63	-1.2822	3.12	-1.7966
1.25	-1.6599	3.75	-1.7732
1.88	-1.7943	4.38	-1.7206
2.50	-1.8612	5.00	-1.6227
3.12	-1.8309	6.25	-1.6723
3.75	-1.7565	7.50	-1.4985
4.38	-1.7710	8.75	-1.1088
5.00	-1.6590	10.00	-0.7344
6.25	-1.5709	15.00	-0.6319
7.50	-1.4183	17.50	-0.6174
8.75	-1.0851	20.00	-0.6090
10.00	-0.7486	30.00	-0.5179
12.50	-0.6230	50.00	-0.4228
15.00	-0.6413	60.00	-0.3935
20.00	-0.6188	70.00	-0.3432
20.00	-0.5984	80.00	-0.3171
30.00	-0.5294	90.00	-0.2752
40.00	-0.4614	100.00	-0.2049
50.00	-0.4332	110.00	-0.1649
60.00	-0.3852		
70.00	-0.3418		
80.00	-0.3129		
90.00	-0.2698		
100.00	-0.2088		
110.00	-0.1652		

Table 9. Continued

(c) Concluded

M = 0.693

mfr = 0.646 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.5444	-11.61	0.5309
-5.81	0.8051	-2.32	1.0733
-3.77	0.9591	0.00	0.5308
-2.32	1.0687	0.31	-0.5358
-1.02	1.1254	0.63	-0.8772
-0.49	1.0790	1.25	-1.3827
0.00	0.5170	1.88	-1.5343
0.31	-0.5250	2.50	-1.5427
0.63	-1.0050	3.12	-1.4533
1.25	-1.4457	3.75	-1.2555
1.88	-1.5576	4.38	-1.2206
2.50	-1.5934	5.00	-1.1129
3.12	-1.5593	6.25	-0.8309
3.75	-1.4124	7.50	-0.6583
4.38	-1.4078	8.75	-0.7997
5.00	-1.3724	10.00	-0.6874
6.25	-0.8447	15.00	-0.6237
7.50	-0.6558	17.50	-0.5779
8.75	-0.7165	20.00	-0.5704
10.00	-0.7011	30.00	-0.4746
12.50	-0.6757	50.00	-0.3968
15.00	-0.6241	60.00	-0.3693
20.00	-0.5899	70.00	-0.3279
20.00	-0.5651	80.00	-0.3041
30.00	-0.4797	90.00	-0.2603
40.00	-0.4421	100.00	-0.1951
50.00	-0.3969	110.00	-0.1536
60.00	-0.3688		
70.00	-0.3307		
80.00	-0.3053		
90.00	-0.2616		
100.00	-0.1996		
110.00	-0.1606		

M = 0.693

mfr = 0.704 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.3438	-11.61	0.3391
-5.81	0.6903	-2.32	1.0034
-3.77	0.8405	0.00	0.6942
-2.32	0.9786	0.31	-0.2780
-1.02	1.1151	0.63	-0.6387
-0.49	1.1141	1.25	-1.0520
0.00	0.7040	1.88	-1.1070
0.31	-0.2755	2.50	-1.0393
0.63	-0.6852	3.12	-0.9902
1.25	-1.1564	3.75	-0.7866
1.88	-1.1547	4.38	-0.7358
2.50	-1.0885	5.00	-0.7239
3.12	-0.9006	6.25	-0.5962
3.75	-1.0289	7.50	-0.6105
4.38	-0.7256	8.75	-0.7793
5.00	-0.8081	10.00	-0.6465
6.25	-0.6210	15.00	-0.5590
7.50	-0.6322	17.50	-0.5136
8.75	-0.6498	20.00	-0.5029
10.00	-0.6673	30.00	-0.4627
12.50	-0.5852	50.00	-0.3820
15.00	-0.5864	60.00	-0.3391
20.00	-0.5639	70.00	-0.3218
20.00	-0.5132	80.00	-0.2677
30.00	-0.4620	90.00	-0.2537
40.00	-0.4174	100.00	-0.1707
50.00	-0.3998	110.00	-0.1400
60.00	-0.3557		
70.00	-0.3064		
80.00	-0.3004		
90.00	-0.2594		
100.00	-0.1794		
110.00	-0.1425		

M = 0.693

mfr = 0.766 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.0539	-11.61	0.0525
-5.81	0.4509	-2.32	0.8830
-3.77	0.6895	0.00	0.8279
-2.32	0.8779	0.31	0.0333
-1.02	1.0827	0.63	-0.3062
-0.49	1.1262	1.25	-0.5851
0.00	0.8834	1.88	-0.6945
0.31	0.0416	2.50	-0.6954
0.63	-0.2623	3.12	-0.6193
1.25	-0.6845	3.75	-0.5476
1.88	-0.7240	4.38	-0.4993
2.50	-0.6778	5.00	-0.4718
3.12	-0.6508	6.25	-0.4725
3.75	-0.5584	7.50	-0.4565
4.38	-0.5696	8.75	-0.6364
5.00	-0.5437	10.00	-0.5088
6.25	-0.5067	15.00	-0.4462
7.50	-0.4701	17.50	-0.4490
8.75	-0.4938	20.00	-0.4360
10.00	-0.4938	30.00	-0.3856
12.50	-0.4606	50.00	-0.3442
15.00	-0.4681	60.00	-0.3279
20.00	-0.4568	70.00	-0.2925
20.00	-0.4192	80.00	-0.2682
30.00	-0.3832	90.00	-0.2328
40.00	-0.3781	100.00	-0.1708
50.00	-0.3480	110.00	-0.1322
60.00	-0.3233		
70.00	-0.2831		
80.00	-0.2671		
90.00	-0.2387		
100.00	-0.1727		
110.00	-0.1294		

M = 0.693

mfr = 0.824 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.2470	-11.61	-0.2480
-5.81	0.2352	-2.32	0.7015
-3.77	0.4651	0.00	0.9481
-2.32	0.7181	0.31	0.3252
-1.02	1.0049	0.63	-0.0144
-0.49	1.1086	1.25	-0.3449
0.00	0.9853	1.88	-0.4313
0.31	0.3084	2.50	-0.3631
0.63	-0.0190	3.12	-0.3936
1.25	-0.2998	3.75	-0.3827
1.88	-0.3826	4.38	-0.2958
2.50	-0.4029	5.00	-0.3030
3.12	-0.3909	6.25	-0.3242
3.75	-0.3375	7.50	-0.3421
4.38	-0.3375	8.75	-0.4475
5.00	-0.3619	10.00	-0.3608
6.25	-0.3188	15.00	-0.3487
7.50	-0.3433	17.50	-0.3720
8.75	-0.3867	20.00	-0.3724
10.00	-0.3714	30.00	-0.3501
12.50	-0.3387	50.00	-0.3286
15.00	-0.3995	60.00	-0.3090
20.00	-0.3979	70.00	-0.2727
20.00	-0.3658	80.00	-0.2535
30.00	-0.3416	90.00	-0.2195
40.00	-0.3384	100.00	-0.1617
50.00	-0.3296	110.00	-0.1188
60.00	-0.3041		
70.00	-0.2820		
80.00	-0.2528		
90.00	-0.2215		
100.00	-0.1602		
110.00	-0.1300		

Table 9. Continued

(d) M = 0.72

M = 0.717

mfr = 0.261 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1218	-11.61	1.1236
-5.81	1.1293	-2.32	0.9842
-3.77	1.0856	0.00	-0.4208
-2.32	0.9980	0.31	-0.9732
-1.02	0.7192	0.63	-1.1084
-0.49	0.4755	1.25	-0.9340
0.00	-0.4512	1.88	-0.9587
0.31	-1.0496	2.50	-1.0186
0.63	-1.0880	3.12	-0.9029
1.25	-1.1646	3.75	-0.9536
1.88	-1.1551	4.38	-0.8760
2.50	-1.1571	5.00	-1.0727
3.12	-1.1519	6.25	-1.1353
3.75	-1.1011	7.50	-0.8676
4.38	-0.9162	8.75	-0.9378
5.00	-0.9356	10.00	-0.8698
6.25	-1.2297	15.00	-0.9197
7.50	-1.0884	17.50	-0.8564
8.75	-1.1678	20.00	-0.9919
10.00	-1.0690	30.00	-0.9705
12.50	-1.0559	50.00	-0.9326
15.00	-1.1284	60.00	-0.8885
20.00	-1.0654	70.00	-0.8199
20.00	-1.1237	80.00	-0.8034
30.00	-1.0516	90.00	-0.6175
40.00	-0.9685	100.00	-0.5462
50.00	-0.9047	110.00	-0.4556
60.00	-0.8596		
70.00	-0.7686		
80.00	-0.7285		
90.00	-0.6064		
100.00	-0.5709		
110.00	-0.4949		

M = 0.717

mfr = 0.312 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0988	-11.61	1.0988
-5.81	1.1341	-2.32	1.0468
-3.77	1.1155	0.00	-0.3226
-2.32	1.0414	0.31	-0.8532
-1.02	0.8059	0.63	-1.4228
-0.49	0.5797	1.25	-0.8282
0.00	-0.3339	1.88	-0.8427
0.31	-1.2322	2.50	-0.8510
0.63	-1.2091	3.12	-0.8269
1.25	-1.0278	3.75	-1.0597
1.88	-1.1151	4.38	-1.1624
2.50	-1.1048	5.00	-1.0602
3.12	-1.1524	6.25	-0.7348
3.75	-0.9770	7.50	-0.8233
4.38	-1.2858	8.75	-0.9465
5.00	-1.0056	10.00	-1.0526
6.25	-1.1710	15.00	-0.9058
7.50	-1.1984	17.50	-0.9410
8.75	-1.2358	20.00	-0.8340
10.00	-1.0778	30.00	-1.0682
12.50	-1.1135	50.00	-0.8853
15.00	-1.1516	60.00	-0.7532
20.00	-1.0921	70.00	-0.6070
20.00	-1.0228	80.00	-0.7046
30.00	-1.0468	90.00	-0.6529
40.00	-1.0070	100.00	-0.3925
50.00	-0.8980	110.00	-0.4771
60.00	-0.8278		
70.00	-0.7819		
80.00	-0.6111		
90.00	-0.5126		
100.00	-0.4609		
110.00	-0.4300		

M = 0.717

mfr = 0.391 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0344	-11.61	1.0375
-5.81	1.1235	-2.32	1.0971
-3.77	1.1324	0.00	-0.1763
-2.32	1.1030	0.31	-1.4468
-1.02	0.9237	0.63	-1.6914
-0.49	0.7397	1.25	-1.5075
0.00	-0.1162	1.88	-1.6137
0.31	-1.3783	2.50	-1.4570
0.63	-1.5707	3.12	-1.6360
1.25	-1.8311	3.75	-1.5549
1.88	-1.5993	4.38	-1.4627
2.50	-1.5484	5.00	-1.4811
3.12	-1.6427	6.25	-1.4180
3.75	-1.7690	7.50	-1.4494
4.38	-1.5385	8.75	-1.4315
5.00	-1.5453	10.00	-1.4258
6.25	-1.4141	15.00	-1.3673
7.50	-1.4682	17.50	-1.3584
8.75	-1.3827	20.00	-1.2766
10.00	-1.2754	30.00	-1.0632
12.50	-1.3307	50.00	-0.6707
15.00	-1.2634	60.00	-0.5073
20.00	-1.2786	70.00	-0.4390
20.00	-1.1716	80.00	-0.3436
30.00	-1.0724	90.00	-0.3026
40.00	-0.8209	100.00	-0.2426
50.00	-0.6980	110.00	-0.2199
60.00	-0.5424		
70.00	-0.4054		
80.00	-0.3817		
90.00	-0.2968		
100.00	-0.2444		
110.00	-0.2043		

M = 0.718

mfr = 0.447 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.9725	-11.61	0.9703
-5.81	1.0999	-2.32	1.1234
-3.77	1.1325	0.00	-0.0148
-2.32	1.1321	0.31	-1.2801
-1.02	1.0003	0.63	-1.5772
-0.49	0.8423	1.25	-1.9182
0.00	0.0225	1.88	-1.9964
0.31	-1.2532	2.50	-2.0376
0.63	-1.6235	3.12	-2.0188
1.25	-1.9614	3.75	-2.0394
1.88	-2.0098	4.38	-2.0146
2.50	-2.0641	5.00	-1.9859
3.12	-2.0478	6.25	-1.9420
3.75	-2.0328	7.50	-1.8875
4.38	-1.9975	8.75	-1.8923
5.00	-1.9935	10.00	-1.8402
6.25	-1.9498	15.00	-1.7289
7.50	-1.8944	17.50	-1.6197
8.75	-1.8749	20.00	-1.0450
10.00	-1.8658	30.00	-0.5682
12.50	-1.7957	50.00	-0.4122
15.00	-1.6580	60.00	-0.3988
20.00	-1.6425	70.00	-0.3620
20.00	-1.3903	80.00	-0.3314
30.00	-0.4716	90.00	-0.2919
40.00	-0.3968	100.00	-0.2280
50.00	-0.4315	110.00	-0.1836
60.00	-0.3954		
70.00	-0.3673		
80.00	-0.3288		
90.00	-0.2925		
100.00	-0.2272		
110.00	-0.1916		

M = 0.718

mfr = 0.524 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.8421	-11.61	0.8523
-5.81	1.0183	-2.32	1.1373
-3.77	1.1091	0.00	0.1804
-2.32	1.1347	0.31	-1.0315
-1.02	1.0798	0.63	-1.3162
-0.49	0.9466	1.25	-1.7016
0.00	0.2536	1.88	-1.7963
0.31	-0.9412	2.50	-1.8672
0.63	-1.4249	3.12	-1.8887
1.25	-1.7652	3.75	-1.8534
1.88	-1.8345	4.38	-1.8455
2.50	-1.8884	5.00	-1.7960
3.12	-1.8757	6.25	-1.7582
3.75	-1.8472	7.50	-1.6842
4.38	-1.8571	8.75	-1.7084
5.00	-1.8203	10.00	-1.6446
6.25	-1.7889	15.00	-1.4717
7.50	-1.7164	17.50	-0.8765
8.75	-1.6323	20.00	-0.6204
10.00	-1.6696	30.00	-0.4855
12.50	-1.5828	50.00	-0.4413
15.00	-1.4244	60.00	-0.4021
20.00	-0.9052	70.00	-0.3586
20.00	-0.6099	80.00	-0.3324
30.00	-0.4694	90.00	-0.2814
40.00	-0.4659	100.00	-0.2157
50.00	-0.4421	110.00	-0.1709
60.00	-0.4041		
70.00	-0.3674		
80.00	-0.3301		
90.00	-0.2857		
100.00	-0.2117		
110.00	-0.1832		

M = 0.717

mfr = 0.586 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.7197	-11.61	0.7143
-5.81	0.9553	-2.32	1.1185
-3.77	1.0525	0.00	0.3471
-2.32	1.1140	0.31	-0.7598
-1.02	1.1164	0.63	-1.0814
-0.49	1.0366	1.25	-1.5089
0.00	0.3984	1.88	-1.6306
0.31	-0.7225	2.50	-1.6990
0.63	-1.1664	3.12	-1.7269
1.25	-1.5747	3.75	-1.7003
1.88	-1.6581	4.38	-1.6515
2.50	-1.7252	5.00	-1.6199
3.12	-1.7347	6.25	-1.5450
3.75	-1.6450	7.50	-1.4683
4.38	-1.6410	8.75	-1.4775
5.00	-1.6362	10.00	-1.3951
6.25	-1.5759	15.00	-0.5683
7.50	-1.4666	17.50	-0.5255
8.75	-1.5055	20.00	-0.5331
10.00	-1.3678	30.00	-0.5206
12.50	-1.1077	50.00	-0.4291
15.00	-0.5435	60.00	-0.3873
20.00	-0.5521	70.00	-0.3446
20.00	-0.5477	80.00	-0.3166
30.00	-0.5192	90.00	-0.2757
40.00	-0.4667	100.00	-0.2037
50.00	-0.4283	110.00	-0.1575
60.00	-0.3960		
70.00	-0.3557		
80.00	-0.3162		
90.00	-0.2710		
100.00	-0.2076		
110.00	-0.1711		

M = 0.718

mfr = 0.648 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.5689	-11.61	0.5511
-5.81	0.8253	-2.32	1.0707
-3.77	0.9676	0.00	0.5324
-2.32	1.0698	0.31	-0.4491
-1.02	1.1355	0.63	-0.8026
-0.49	1.0959	1.25	-1.3046
0.00	0.5402	1.88	-1.4750
0.31	-0.5098	2.50	-1.4711
0.63	-0.9109	3.12	-1.3648
1.25	-1.3229	3.75	-1.4055
1.88	-1.4662	4.38	-1.3140
2.50	-1.5023	5.00	-1.1677
3.12	-1.4686	6.25	-1.2870
3.75	-1.3622	7.50	-0.9250
4.38	-1.3190	8.75	-0.7598
5.00	-1.3047	10.00	-0.6432
6.25	-1.1724	15.00	-0.6071
7.50	-0.6877	17.50	-0.5999
8.75	-0.6465	20.00	-0.5790
10.00	-0.6238	30.00	-0.4915
12.50	-0.6441	50.00	-0.4148
15.00	-0.6300	60.00	-0.3751
20.00	-0.6060	70.00	-0.3338
20.00	-0.5733	80.00	-0.3063
30.00	-0.4892	90.00	-0.2672
40.00	-0.4537	100.00	-0.1952
50.00	-0.4130	110.00	-0.1534
60.00	-0.3783		
70.00	-0.3405		
80.00	-0.3047		
90.00	-0.2668		
100.00	-0.1993		
110.00	-0.1614		

M = 0.717

mfr = 0.705 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.3535	-11.61	0.3584
-5.81	0.6965	-2.32	0.9986
-3.77	0.8772	0.00	0.7082
-2.32	1.0043	0.31	-0.1886
-1.02	1.1262	0.63	-0.5764
-0.49	1.1304	1.25	-1.0952
0.00	0.7116	1.88	-1.0918
0.31	-0.2805	2.50	-1.0122
0.63	-0.6405	3.12	-0.9258
1.25	-1.0950	3.75	-0.8544
1.88	-1.1164	4.38	-0.8960
2.50	-1.1355	5.00	-0.7682
3.12	-1.0012	6.25	-0.6271
3.75	-1.0099	7.50	-0.5904
4.38	-0.9316	8.75	-0.7814
5.00	-0.7999	10.00	-0.6266
6.25	-0.7316	15.00	-0.5519
7.50	-0.5952	17.50	-0.5305
8.75	-0.6616	20.00	-0.5175
10.00	-0.6246	30.00	-0.4514
12.50	-0.5940	50.00	-0.3805
15.00	-0.5726	60.00	-0.3591
20.00	-0.5466	70.00	-0.3186
20.00	-0.5167	80.00	-0.2910
30.00	-0.4560	90.00	-0.2527
40.00	-0.4161	100.00	-0.1855
50.00	-0.3873	110.00	-0.1388
60.00	-0.3470		
70.00	-0.3288		
80.00	-0.2910		
90.00	-0.2505		
100.00	-0.1873		
110.00	-0.1544		

Table 9. Continued

(d) Concluded

M = 0.719

mfr = 0.761 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.1267	-11.61	0.0996
-5.81	0.4892	-2.32	0.9212
-3.77	0.7676	0.00	0.8467
-2.32	0.8895	0.31	0.0504
-1.02	1.0989	0.63	-0.2638
-0.49	1.1333	1.25	-0.7038
0.00	0.8519	1.88	-0.6406
0.31	0.0535	2.50	-0.7038
0.63	-0.3094	3.12	-0.6885
1.25	-0.7954	3.75	-0.6147
1.88	-0.7344	4.38	-0.5882
2.50	-0.7832	5.00	-0.5449
3.12	-0.6825	6.25	-0.4995
3.75	-0.5878	7.50	-0.4986
4.38	-0.5613	8.75	-0.6987
5.00	-0.5407	10.00	-0.5124
6.25	-0.6116	15.00	-0.4830
7.50	-0.5292	17.50	-0.4403
8.75	-0.5137	20.00	-0.4648
10.00	-0.5264	30.00	-0.4091
12.50	-0.4753	50.00	-0.3550
15.00	-0.4702	60.00	-0.3377
20.00	-0.5030	70.00	-0.2955
20.00	-0.4377	80.00	-0.2782
30.00	-0.3921	90.00	-0.2321
40.00	-0.3853	100.00	-0.1687
50.00	-0.3539	110.00	-0.1323
60.00	-0.3206		
70.00	-0.3146		
80.00	-0.2750		
90.00	-0.2373		
100.00	-0.1717		
110.00	-0.1459		

M = 0.718

mfr = 0.829 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.2328	-11.61	-0.2403
-5.81	0.2272	-2.32	0.7394
-3.77	0.5161	0.00	0.9784
-2.32	0.7393	0.31	0.2864
-1.02	1.0059	0.63	0.0172
-0.49	1.1202	1.25	-0.3204
0.00	0.9866	1.88	-0.3265
0.31	0.2993	2.50	-0.3880
0.63	0.0345	3.12	-0.3746
1.25	-0.2939	3.75	-0.3124
1.88	-0.4090	4.38	-0.3242
2.50	-0.4213	5.00	-0.3142
3.12	-0.3473	6.25	-0.3345
3.75	-0.3686	7.50	-0.3698
4.38	-0.3599	8.75	-0.5060
5.00	-0.3804	10.00	-0.3475
6.25	-0.3635	15.00	-0.3871
7.50	-0.3690	17.50	-0.3569
8.75	-0.3544	20.00	-0.3702
10.00	-0.4121	30.00	-0.3506
12.50	-0.3840	50.00	-0.3240
15.00	-0.3839	60.00	-0.3039
20.00	-0.3935	70.00	-0.2839
20.00	-0.3886	80.00	-0.2546
30.00	-0.3650	90.00	-0.2221
40.00	-0.3359	100.00	-0.1540
50.00	-0.3318	110.00	-0.1247
60.00	-0.3083		
70.00	-0.2799		
80.00	-0.2602		
90.00	-0.2240		
100.00	-0.1654		
110.00	-0.1244		

Table 9. Continued

(e) M = 0.74

M = 0.742

mfr = 0.262 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1328	-11.61	1.1353
-5.81	1.1383	-2.32	1.0059
-3.77	1.1009	0.00	-0.3405
-2.32	1.0099	0.31	-1.0279
-1.02	0.7507	0.63	-1.0781
-0.49	0.5218	1.25	-0.9495
0.00	-0.3718	1.88	-0.9003
0.31	-1.1039	2.50	-0.7723
0.63	-0.9890	3.12	-1.0071
1.25	-1.0015	3.75	-1.0752
1.88	-1.0148	4.38	-0.8879
2.50	-0.8904	5.00	-0.8839
3.12	-0.9147	6.25	-0.8710
3.75	-1.0784	7.50	-0.8434
4.38	-1.0299	8.75	-0.8715
5.00	-0.9227	10.00	-0.8707
6.25	-0.9178	15.00	-0.9781
7.50	-0.8616	17.50	-0.9137
8.75	-0.8915	20.00	-0.8882
10.00	-0.9378	30.00	-0.8388
12.50	-0.9447	50.00	-0.8021
15.00	-0.9702	60.00	-0.8332
20.00	-0.9587	70.00	-0.7949
20.00	-0.8830	80.00	-0.7454
30.00	-0.8794	90.00	-0.6998
40.00	-0.9444	100.00	-0.6304
50.00	-0.9036	110.00	-0.5273
60.00	-0.8635		
70.00	-0.7966		
80.00	-0.7684		
90.00	-0.6716		
100.00	-0.6279		
110.00	-0.5845		

M = 0.744

mfr = 0.313 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1123	-11.61	1.1089
-5.81	1.1448	-2.32	1.0568
-3.77	1.1283	0.00	-0.2686
-2.32	1.0652	0.31	-1.4785
-1.02	0.8332	0.63	-0.9932
-0.49	0.6247	1.25	-1.2983
0.00	-0.2455	1.88	-1.3483
0.31	-1.2027	2.50	-1.5023
0.63	-1.1546	3.12	-1.2982
1.25	-1.0888	3.75	-1.3216
1.88	-1.0933	4.38	-1.3425
2.50	-1.0680	5.00	-0.9969
3.12	-1.0710	6.25	-1.3589
3.75	-1.0668	7.50	-0.9480
4.38	-1.2257	8.75	-1.3492
5.00	-0.9916	10.00	-1.0551
6.25	-1.1925	15.00	-0.7942
7.50	-1.0979	17.50	-1.2775
8.75	-1.0434	20.00	-0.8281
10.00	-1.1040	30.00	-1.0823
12.50	-0.8693	50.00	-0.9267
15.00	-1.0486	60.00	-0.8099
20.00	-1.0661	70.00	-0.7299
20.00	-1.0521	80.00	-0.6012
30.00	-0.9749	90.00	-0.4540
40.00	-0.9271	100.00	-0.4740
50.00	-0.9088	110.00	-0.4035
60.00	-0.8326		
70.00	-0.7618		
80.00	-0.6486		
90.00	-0.6575		
100.00	-0.4651		
110.00	-0.4494		

M = 0.742

mfr = 0.390 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0500	-11.61	1.0547
-5.81	1.1311	-2.32	1.1078
-3.77	1.1441	0.00	-0.1120
-2.32	1.1106	0.31	-1.3628
-1.02	0.9379	0.63	-1.6100
-0.49	0.7475	1.25	-1.9020
0.00	-0.0898	1.88	-1.9812
0.31	-1.3088	2.50	-2.0134
0.63	-1.6266	3.12	-2.0239
1.25	-1.9159	3.75	-2.0228
1.88	-1.9755	4.38	-1.9990
2.50	-2.0336	5.00	-1.9742
3.12	-2.0332	6.25	-1.9566
3.75	-2.0199	7.50	-1.9101
4.38	-2.0086	8.75	-1.9064
5.00	-1.9850	10.00	-1.8696
6.25	-1.9474	15.00	-1.7587
7.50	-1.9254	17.50	-1.6806
8.75	-1.8814	20.00	-1.6734
10.00	-1.8730	30.00	-0.9703
12.50	-1.8207	50.00	-0.3452
15.00	-1.7498	60.00	-0.3043
20.00	-1.7283	70.00	-0.3060
20.00	-1.6523	80.00	-0.3031
30.00	-1.1357	90.00	-0.2699
40.00	-0.5855	100.00	-0.2168
50.00	-0.3318	110.00	-0.1794
60.00	-0.3128		
70.00	-0.3137		
80.00	-0.3030		
90.00	-0.2702		
100.00	-0.2213		
110.00	-0.1857		

M = 0.743

mfr = 0.446 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9917	-11.61	0.9790
-5.81	1.1081	-2.32	1.1358
-3.77	1.1455	0.00	0.0325
-2.32	1.1401	0.31	-1.1598
-1.02	1.0214	0.63	-1.4577
-0.49	0.8519	1.25	-1.7653
0.00	0.0576	1.88	-1.8656
0.31	-1.1134	2.50	-1.9040
0.63	-1.5049	3.12	-1.9126
1.25	-1.7987	3.75	-1.9100
1.88	-1.8699	4.38	-1.8780
2.50	-1.9279	5.00	-1.8555
3.12	-1.9082	6.25	-1.8185
3.75	-1.8870	7.50	-1.7922
4.38	-1.8949	8.75	-1.7741
5.00	-1.8650	10.00	-1.7231
6.25	-1.8200	15.00	-1.6440
7.50	-1.7957	17.50	-1.5951
8.75	-1.7480	20.00	-1.5411
10.00	-1.7381	30.00	-0.7769
12.50	-1.6950	50.00	-0.3200
15.00	-1.6268	60.00	-0.3433
20.00	-1.5624	70.00	-0.3357
20.00	-1.5397	80.00	-0.3144
30.00	-0.8289	90.00	-0.2797
40.00	-0.3642	100.00	-0.2165
50.00	-0.3476	110.00	-0.1758
60.00	-0.3504		
70.00	-0.3476		
80.00	-0.3176		
90.00	-0.2853		
100.00	-0.2158		
110.00	-0.1859		

M = 0.743

mfr = 0.519 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.8656	-11.61	0.8783
-5.81	1.0429	-2.32	1.1467
-3.77	1.1176	0.00	0.2401
-2.32	1.1452	0.31	-0.9082
-1.02	1.0860	0.63	-1.2292
-0.49	0.9623	1.25	-1.5862
0.00	0.2845	1.88	-1.6966
0.31	-0.8772	2.50	-1.7380
0.63	-1.3184	3.12	-1.7565
1.25	-1.6616	3.75	-1.7415
1.88	-1.7165	4.38	-1.7175
2.50	-1.7559	5.00	-1.6887
3.12	-1.7575	6.25	-1.6416
3.75	-1.7442	7.50	-1.5883
4.38	-1.7157	8.75	-1.5913
5.00	-1.7082	10.00	-1.5530
6.25	-1.6597	15.00	-1.4563
7.50	-1.5919	17.50	-1.4448
8.75	-1.5760	20.00	-1.3644
10.00	-1.5961	30.00	-0.4434
12.50	-1.5173	50.00	-0.4119
15.00	-1.4662	60.00	-0.3953
20.00	-1.3957	70.00	-0.3579
20.00	-1.3770	80.00	-0.3243
30.00	-0.4154	90.00	-0.2861
40.00	-0.3884	100.00	-0.2111
50.00	-0.4101	110.00	-0.1699
60.00	-0.3955		
70.00	-0.3638		
80.00	-0.3271		
90.00	-0.2805		
100.00	-0.2115		
110.00	-0.1788		

M = 0.745

mfr = 0.588 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7438	-11.61	0.7192
-5.81	0.9566	-2.32	1.1339
-3.77	1.0637	0.00	0.4137
-2.32	1.1268	0.31	-0.6538
-1.02	1.1285	0.63	-0.9776
-0.49	1.0491	1.25	-1.3847
0.00	0.4184	1.88	-1.5198
0.31	-0.6029	2.50	-1.5882
0.63	-1.0398	3.12	-1.6289
1.25	-1.4454	3.75	-1.5831
1.88	-1.5357	4.38	-1.5530
2.50	-1.5973	5.00	-1.5146
3.12	-1.6347	6.25	-1.4631
3.75	-1.5826	7.50	-1.3873
4.38	-1.5440	8.75	-1.4618
5.00	-1.5138	10.00	-1.3193
6.25	-1.4927	15.00	-1.1962
7.50	-1.4711	17.50	-0.5180
8.75	-1.3958	20.00	-0.5210
10.00	-1.3773	30.00	-0.4708
12.50	-1.2519	50.00	-0.4372
15.00	-1.2607	60.00	-0.3999
20.00	-0.7170	70.00	-0.3515
20.00	-0.6524	80.00	-0.3217
30.00	-0.4797	90.00	-0.2773
40.00	-0.4647	100.00	-0.2037
50.00	-0.4366	110.00	-0.1626
60.00	-0.3965		
70.00	-0.3621		
80.00	-0.3243		
90.00	-0.2762		
100.00	-0.2044		
110.00	-0.1702		

M = 0.743

mfr = 0.647 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.5655	-11.61	0.5698
-5.81	0.8556	-2.32	1.0932
-3.77	0.9640	0.00	0.5734
-2.32	1.0817	0.31	-0.3923
-1.02	1.1441	0.63	-0.7744
-0.49	1.1080	1.25	-1.2209
0.00	0.5949	1.88	-1.3180
0.31	-0.4172	2.50	-1.3534
0.63	-0.8558	3.12	-1.3989
1.25	-1.2581	3.75	-1.3688
1.88	-1.3796	4.38	-1.3420
2.50	-1.4092	5.00	-1.3010
3.12	-1.4331	6.25	-1.1836
3.75	-1.3363	7.50	-0.9829
4.38	-1.3602	8.75	-1.2321
5.00	-1.3834	10.00	-1.0179
6.25	-1.1632	15.00	-0.5983
7.50	-1.1746	17.50	-0.5620
8.75	-1.1325	20.00	-0.5731
10.00	-1.0770	30.00	-0.5002
12.50	-0.5636	50.00	-0.4239
15.00	-0.5222	60.00	-0.3880
20.00	-0.5598	70.00	-0.3365
20.00	-0.5649	80.00	-0.3054
30.00	-0.5113	90.00	-0.2616
40.00	-0.4711	100.00	-0.1983
50.00	-0.4278	110.00	-0.1491
60.00	-0.3853		
70.00	-0.3437		
80.00	-0.3128		
90.00	-0.2728		
100.00	-0.1955		
110.00	-0.1585		

M = 0.744

mfr = 0.702 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.3821	-11.61	0.3838
-5.81	0.7146	-2.32	1.0374
-3.77	0.8932	0.00	0.7390
-2.32	1.0149	0.31	-0.1637
-1.02	1.1407	0.63	-0.5527
-0.49	1.1358	1.25	-1.0201
0.00	0.7379	1.88	-1.1008
0.31	-0.2125	2.50	-1.1523
0.63	-0.5758	3.12	-1.1004
1.25	-1.0321	3.75	-1.0439
1.88	-1.1018	4.38	-0.9500
2.50	-1.1101	5.00	-0.8828
3.12	-1.1679	6.25	-0.6751
3.75	-1.1702	7.50	-0.6184
4.38	-0.9666	8.75	-0.8201
5.00	-0.8675	10.00	-0.6222
6.25	-0.8974	15.00	-0.5814
7.50	-0.6936	17.50	-0.5355
8.75	-0.6168	20.00	-0.5470
10.00	-0.6410	30.00	-0.4866
12.50	-0.6175	50.00	-0.3940
15.00	-0.6130	60.00	-0.3617
20.00	-0.5633	70.00	-0.3349
20.00	-0.5532	80.00	-0.2971
30.00	-0.4866	90.00	-0.2548
40.00	-0.4286	100.00	-0.1853
50.00	-0.4121	110.00	-0.1438
60.00	-0.3697		
70.00	-0.3362		
80.00	-0.3000		
90.00	-0.2535		
100.00	-0.1894		
110.00	-0.1508		

Table 9. Continued

(e) Concluded

M = 0.745

mfr = 0.762 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.1376	-11.61	0.1389
-5.81	0.5089	-2.32	0.9138
-3.77	0.7391	0.00	0.8578
-2.32	0.9134	0.31	0.0656
-1.02	1.1005	0.63	-0.2011
-0.49	1.1440	1.25	-0.7297
0.00	0.8719	1.88	-0.8442
0.31	0.0382	2.50	-0.7301
0.63	-0.2726	3.12	-0.6606
1.25	-0.5554	3.75	-0.5511
1.88	-0.7313	4.38	-0.5679
2.50	-0.8615	5.00	-0.5519
3.12	-0.6152	6.25	-0.5236
3.75	-0.6765	7.50	-0.4869
4.38	-0.5974	8.75	-0.6712
5.00	-0.5546	10.00	-0.5417
6.25	-0.5319	15.00	-0.4686
7.50	-0.5202	17.50	-0.4537
8.75	-0.5300	20.00	-0.4631
10.00	-0.5565	30.00	-0.4312
12.50	-0.5062	50.00	-0.3627
15.00	-0.5156	60.00	-0.3474
20.00	-0.4669	70.00	-0.3020
20.00	-0.4575	80.00	-0.2825
30.00	-0.4256	90.00	-0.2465
40.00	-0.3986	100.00	-0.1745
50.00	-0.3791	110.00	-0.1342
60.00	-0.3352		
70.00	-0.3113		
80.00	-0.2868		
90.00	-0.2455		
100.00	-0.1743		
110.00	-0.1390		

M = 0.742

mfr = 0.827 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	-0.2067	-11.61	-0.2365
-5.81	0.2813	-2.32	0.7576
-3.77	0.5502	0.00	0.9969
-2.32	0.7330	0.31	0.3471
-1.02	1.0234	0.63	0.0526
-0.49	1.1323	1.25	-0.3199
0.00	0.9989	1.88	-0.3913
0.31	0.2712	2.50	-0.3725
0.63	-0.0117	3.12	-0.3387
1.25	-0.2363	3.75	-0.3212
1.88	-0.3712	4.38	-0.3124
2.50	-0.4084	5.00	-0.3174
3.12	-0.3647	6.25	-0.3213
3.75	-0.3624	7.50	-0.3490
4.38	-0.3168	8.75	-0.5134
5.00	-0.3370	10.00	-0.3550
6.25	-0.3951	15.00	-0.3708
7.50	-0.3434	17.50	-0.3802
8.75	-0.4031	20.00	-0.3904
10.00	-0.3879	30.00	-0.3695
12.50	-0.4058	50.00	-0.3276
15.00	-0.3962	60.00	-0.3148
20.00	-0.3947	70.00	-0.2816
20.00	-0.3904	80.00	-0.2676
30.00	-0.3594	90.00	-0.2306
40.00	-0.3538	100.00	-0.1608
50.00	-0.3408	110.00	-0.1169
60.00	-0.3133		
70.00	-0.2914		
80.00	-0.2651		
90.00	-0.2283		
100.00	-0.1606		
110.00	-0.1293		

Table 9. Continued

(f) M = 0.77

M = 0.768

mfr = 0.260 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1444	-11.61	1.1436
-5.81	1.1517	-2.32	1.0197
-3.77	1.1095	0.00	-0.3018
-2.32	1.0299	0.31	-0.8225
-1.02	0.7656	0.63	-1.0046
-0.49	0.5466	1.25	-0.8870
0.00	-0.3070	1.88	-0.9591
0.31	-0.9629	2.50	-0.9542
0.63	-0.8758	3.12	-0.8948
1.25	-0.9864	3.75	-0.7981
1.88	-0.9237	4.38	-0.8833
2.50	-0.9923	5.00	-0.9151
3.12	-0.9458	6.25	-0.9237
3.75	-0.9099	7.50	-0.9444
4.38	-0.8704	8.75	-1.2112
5.00	-0.9045	10.00	-0.9624
6.25	-0.9505	15.00	-0.9004
7.50	-0.9030	17.50	-0.9860
8.75	-0.9861	20.00	-0.8034
10.00	-0.8998	30.00	-1.0100
12.50	-0.8863	50.00	-0.9021
15.00	-0.9748	60.00	-0.8850
20.00	-0.9045	70.00	-0.8348
20.00	-1.0177	80.00	-0.7903
30.00	-0.9197	90.00	-0.6876
40.00	-0.9322	100.00	-0.6550
50.00	-0.9433	110.00	-0.5641
60.00	-0.8565		
70.00	-0.8188		
80.00	-0.7388		
90.00	-0.7180		
100.00	-0.6388		
110.00	-0.5878		

M = 0.767

mfr = 0.308 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1184	-11.61	1.1216
-5.81	1.1535	-2.32	1.0614
-3.77	1.1347	0.00	-0.2200
-2.32	1.0792	0.31	-1.3938
-1.02	0.8473	0.63	-1.4113
-0.49	0.6483	1.25	-1.3002
0.00	-0.1881	1.88	-1.3722
0.31	-1.2356	2.50	-1.0993
0.63	-1.0770	3.12	-1.3215
1.25	-1.1090	3.75	-1.5543
1.88	-1.0043	4.38	-1.2631
2.50	-1.0239	5.00	-1.3571
3.12	-1.0621	6.25	-1.3964
3.75	-1.0981	7.50	-1.3284
4.38	-0.9803	8.75	-1.3253
5.00	-1.1562	10.00	-1.4044
6.25	-1.0269	15.00	-1.3141
7.50	-1.0512	17.50	-1.3365
8.75	-1.0596	20.00	-1.2222
10.00	-1.0178	30.00	-0.9947
12.50	-0.9853	50.00	-0.8469
15.00	-1.0773	60.00	-0.7904
20.00	-0.9882	70.00	-0.7279
20.00	-1.0121	80.00	-0.6867
30.00	-0.9614	90.00	-0.5678
40.00	-0.9521	100.00	-0.4865
50.00	-0.9068	110.00	-0.4465
60.00	-0.8374		
70.00	-0.7892		
80.00	-0.6891		
90.00	-0.6335		
100.00	-0.5391		
110.00	-0.4895		

M = 0.766

mfr = 0.389 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0594	-11.61	1.0663
-5.81	1.1455	-2.32	1.1209
-3.77	1.1520	0.00	-0.0612
-2.32	1.1254	0.31	-1.2684
-1.02	0.9641	0.63	-1.5043
-0.49	0.7741	1.25	-1.7703
0.00	-0.0226	1.88	-1.8432
0.31	-1.2067	2.50	-1.8844
0.63	-1.5133	3.12	-1.8953
1.25	-1.8000	3.75	-1.8979
1.88	-1.8437	4.38	-1.8709
2.50	-1.8980	5.00	-1.8545
3.12	-1.8958	6.25	-1.8313
3.75	-1.8951	7.50	-1.7997
4.38	-1.8736	8.75	-1.7775
5.00	-1.8616	10.00	-1.7600
6.25	-1.8284	15.00	-1.6748
7.50	-1.7979	17.50	-1.6442
8.75	-1.7767	20.00	-1.5902
10.00	-1.7615	30.00	-1.4645
12.50	-1.7213	50.00	-0.6753
15.00	-1.6502	60.00	-0.3696
20.00	-1.6296	70.00	-0.2318
20.00	-1.5802	80.00	-0.2354
30.00	-1.4587	90.00	-0.2301
40.00	-1.1456	100.00	-0.1869
50.00	-0.5178	110.00	-0.1563
60.00	-0.3942		
70.00	-0.2591		
80.00	-0.2512		
90.00	-0.2312		
100.00	-0.1900		
110.00	-0.1642		

M = 0.768

mfr = 0.445 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.9956	-11.61	0.9964
-5.81	1.1200	-2.32	1.1445
-3.77	1.1507	0.00	0.0835
-2.32	1.1481	0.31	-1.0451
-1.02	1.0299	0.63	-1.3756
-0.49	0.8829	1.25	-1.6447
0.00	0.1237	1.88	-1.7395
0.31	-1.0466	2.50	-1.7872
0.63	-1.3842	3.12	-1.7791
1.25	-1.6868	3.75	-1.7844
1.88	-1.7529	4.38	-1.7664
2.50	-1.7714	5.00	-1.7415
3.12	-1.7896	6.25	-1.7181
3.75	-1.7867	7.50	-1.6672
4.38	-1.7758	8.75	-1.6704
5.00	-1.7536	10.00	-1.6350
6.25	-1.7071	15.00	-1.5409
7.50	-1.6987	17.50	-1.4883
8.75	-1.6674	20.00	-1.4817
10.00	-1.6543	30.00	-1.3539
12.50	-1.5864	50.00	-0.4234
15.00	-1.5571	60.00	-0.3061
20.00	-1.5006	70.00	-0.2453
20.00	-1.4621	80.00	-0.2776
30.00	-1.3235	90.00	-0.2543
40.00	-0.6627	100.00	-0.1989
50.00	-0.4282	110.00	-0.1615
60.00	-0.2679		
70.00	-0.2551		
80.00	-0.2764		
90.00	-0.2551		
100.00	-0.2005		
110.00	-0.1654		

M = 0.768

mfr = 0.465 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.9781	-11.61	0.9696
-5.81	1.1079	-2.32	1.1538
-3.77	1.1506	0.00	0.1110
-2.32	1.1553	0.31	-1.0065
-1.02	1.0503	0.63	-1.3133
-0.49	0.9025	1.25	-1.6061
0.00	0.1601	1.88	-1.7047
0.31	-0.9606	2.50	-1.7212
0.63	-1.3422	3.12	-1.7405
1.25	-1.6283	3.75	-1.7461
1.88	-1.7054	4.38	-1.7256
2.50	-1.7508	5.00	-1.7073
3.12	-1.7569	6.25	-1.6762
3.75	-1.7224	7.50	-1.6244
4.38	-1.7195	8.75	-1.6208
5.00	-1.6879	10.00	-1.5843
6.25	-1.6580	15.00	-1.4594
7.50	-1.6460	17.50	-1.4370
8.75	-1.6083	20.00	-1.4280
10.00	-1.5879	30.00	-1.2965
12.50	-1.5592	50.00	-0.4406
15.00	-1.5118	60.00	-0.2931
20.00	-1.4454	70.00	-0.2886
20.00	-1.4070	80.00	-0.2923
30.00	-1.2616	90.00	-0.2593
40.00	-0.6253	100.00	-0.2027
50.00	-0.3825	110.00	-0.1640
60.00	-0.2949		
70.00	-0.3050		
80.00	-0.2962		
90.00	-0.2603		
100.00	-0.1990		
110.00	-0.1732		

M = 0.768

mfr = 0.521 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.8917	-11.61	0.8877
-5.81	1.0556	-2.32	1.1570
-3.77	1.1256	0.00	0.2830
-2.32	1.1555	0.31	-0.8166
-1.02	1.1047	0.63	-1.1463
-0.49	0.9826	1.25	-1.4885
0.00	0.2899	1.88	-1.5781
0.31	-0.8156	2.50	-1.6244
0.63	-1.1999	3.12	-1.6432
1.25	-1.5432	3.75	-1.6175
1.88	-1.5926	4.38	-1.6223
2.50	-1.6330	5.00	-1.5754
3.12	-1.6370	6.25	-1.5585
3.75	-1.6400	7.50	-1.4852
4.38	-1.6138	8.75	-1.5197
5.00	-1.6051	10.00	-1.4893
6.25	-1.5690	15.00	-1.3929
7.50	-1.5116	17.50	-1.3484
8.75	-1.4899	20.00	-1.3309
10.00	-1.4870	30.00	-1.0378
12.50	-1.4637	50.00	-0.3397
15.00	-1.3962	60.00	-0.3556
20.00	-1.3424	70.00	-0.3348
20.00	-1.2591	80.00	-0.3132
30.00	-0.9830	90.00	-0.2773
40.00	-0.3887	100.00	-0.2060
50.00	-0.3338	110.00	-0.1641
60.00	-0.3470		
70.00	-0.3454		
80.00	-0.3155		
90.00	-0.2771		
100.00	-0.2030		
110.00	-0.1719		

M = 0.768

mfr = 0.587 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.7378	-11.61	0.7447
-5.81	0.9698	-2.32	1.1427
-3.77	1.0645	0.00	0.4963
-2.32	1.1434	0.31	-0.5609
-1.02	1.1473	0.63	-0.9050
-0.49	1.0649	1.25	-1.2810
0.00	0.4934	1.88	-1.4046
0.31	-0.5413	2.50	-1.4952
0.63	-0.9494	3.12	-1.5111
1.25	-1.3427	3.75	-1.4809
1.88	-1.4290	4.38	-1.4561
2.50	-1.4900	5.00	-1.3972
3.12	-1.4802	6.25	-1.3808
3.75	-1.5082	7.50	-1.2928
4.38	-1.4846	8.75	-1.3778
5.00	-1.4566	10.00	-1.3022
6.25	-1.3808	15.00	-1.2475
7.50	-1.3419	17.50	-1.1484
8.75	-1.3354	20.00	-1.1305
10.00	-1.3285	30.00	-0.4483
12.50	-1.2565	50.00	-0.4414
15.00	-1.1706	60.00	-0.4062
20.00	-1.1498	70.00	-0.3662
20.00	-1.1033	80.00	-0.3279
30.00	-0.3910	90.00	-0.2798
40.00	-0.4093	100.00	-0.2081
50.00	-0.4335	110.00	-0.1614
60.00	-0.3931		
70.00	-0.3605		
80.00	-0.3318		
90.00	-0.2809		
100.00	-0.2028		
110.00	-0.1652		

M = 0.767

mfr = 0.648 and α = 0.0°

φ = 0°		φ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.5765	-11.61	0.5680
-5.81	0.8499	-2.32	1.0927
-3.77	0.9936	0.00	0.6172
-2.32	1.0912	0.31	-0.3514
-1.02	1.1557	0.63	-0.6494
-0.49	1.1172	1.25	-1.1042
0.00	0.6294	1.88	-1.2481
0.31	-0.3513	2.50	-1.3205
0.63	-0.6760	3.12	-1.3215
1.25	-1.1555	3.75	-1.2976
1.88	-1.2607	4.38	-1.3279
2.50	-1.3179	5.00	-1.2526
3.12	-1.3088	6.25	-1.1713
3.75	-1.3106	7.50	-1.1009
4.38	-1.2935	8.75	-1.2033
5.00	-1.2953	10.00	-1.0881
6.25	-1.2090	15.00	-0.8632
7.50	-1.1737	17.50	-0.4979
8.75	-1.0831	20.00	-0.4836
10.00	-1.0965	30.00	-0.5159
12.50	-1.0784	50.00	-0.4345
15.00	-0.6728	60.00	-0.3988
20.00	-0.5079	70.00	-0.3522
20.00	-0.4868	80.00	-0.3179
30.00	-0.5126	90.00	-0.2712
40.00	-0.4706	100.00	-0.1888
50.00	-0.4329	110.00	-0.1510
60.00	-0.3896		
70.00	-0.3571		
80.00	-0.3222		
90.00	-0.2697		
100.00	-0.1966		
110.00	-0.1581		

Table 9. Continued

(f) Concluded

M = 0.767

mfr = 0.702 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.3962	-11.61	0.3966
-5.81	0.7465	-2.32	1.0335
-3.77	0.8860	0.00	0.7457
-2.32	1.0402	0.31	-0.1659
-1.02	1.1493	0.63	-0.4852
-0.49	1.1484	1.25	-0.9451
0.00	0.7578	1.88	-1.0106
0.31	-0.1902	2.50	-1.0806
0.63	-0.5309	3.12	-1.0388
1.25	-0.9893	3.75	-0.9840
1.88	-1.0692	4.38	-0.9264
2.50	-1.1267	5.00	-0.9988
3.12	-1.1264	6.25	-0.9157
3.75	-1.1060	7.50	-0.7257
4.38	-1.1278	8.75	-0.8461
5.00	-0.9449	10.00	-0.6242
6.25	-0.8429	15.00	-0.6017
7.50	-0.8513	17.50	-0.5594
8.75	-0.8647	20.00	-0.5635
10.00	-0.6676	30.00	-0.4956
12.50	-0.6071	50.00	-0.4137
15.00	-0.5911	60.00	-0.3748
20.00	-0.5853	70.00	-0.3355
20.00	-0.5472	80.00	-0.3015
30.00	-0.4876	90.00	-0.2597
40.00	-0.4494	100.00	-0.1899
50.00	-0.4191	110.00	-0.1414
60.00	-0.3678		
70.00	-0.3486		
80.00	-0.3128		
90.00	-0.2591		
100.00	-0.1884		
110.00	-0.1540		

M = 0.769

mfr = 0.760 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.1431	-11.61	0.1012
-5.81	0.5608	-2.32	0.9305
-3.77	0.7427	0.00	0.8801
-2.32	0.9270	0.31	0.0573
-1.02	1.1221	0.63	-0.2397
-0.49	1.1579	1.25	-0.6342
0.00	0.8941	1.88	-0.7314
0.31	0.0959	2.50	-0.7637
0.63	-0.2731	3.12	-0.7110
1.25	-0.6026	3.75	-0.6085
1.88	-0.6661	4.38	-0.5548
2.50	-0.7617	5.00	-0.4959
3.12	-0.7646	6.25	-0.5130
3.75	-0.6113	7.50	-0.5183
4.38	-0.6033	8.75	-0.7489
5.00	-0.5626	10.00	-0.5167
6.25	-0.5168	15.00	-0.5049
7.50	-0.5132	17.50	-0.5032
8.75	-0.5895	20.00	-0.4914
10.00	-0.6254	30.00	-0.4437
12.50	-0.5020	50.00	-0.3885
15.00	-0.5169	60.00	-0.3603
20.00	-0.5005	70.00	-0.3248
20.00	-0.4849	80.00	-0.2873
30.00	-0.4337	90.00	-0.2546
40.00	-0.4049	100.00	-0.1761
50.00	-0.3879	110.00	-0.1354
60.00	-0.3589		
70.00	-0.3317		
80.00	-0.2904		
90.00	-0.2469		
100.00	-0.1796		
110.00	-0.1468		

Table 9. Continued

(g) M = 0.79

M = 0.791

mfr = 0.260 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1515	-11.61	1.1539
-5.81	1.1576	-2.32	1.0344
-3.77	1.1256	0.00	-0.2708
-2.32	1.0356	0.31	-1.3671
-1.02	0.7906	0.63	-1.0368
-0.49	0.5752	1.25	-0.8128
0.00	-0.2866	1.88	-0.8166
0.31	-1.0287	2.50	-1.0617
0.63	-1.0196	3.12	-0.8305
1.25	-0.9556	3.75	-0.9531
1.88	-1.0140	4.38	-0.8860
2.50	-1.0189	5.00	-0.8852
3.12	-1.1288	6.25	-1.0795
3.75	-0.8758	7.50	-0.8973
4.38	-0.9885	8.75	-0.8933
5.00	-0.9381	10.00	-0.8608
6.25	-0.9829	15.00	-1.1855
7.50	-0.9525	17.50	-1.2287
8.75	-0.9787	20.00	-1.1108
10.00	-0.9707	30.00	-0.8777
12.50	-0.8097	50.00	-0.9201
15.00	-0.8999	60.00	-0.9017
20.00	-0.7936	70.00	-0.8105
20.00	-0.9110	80.00	-0.8097
30.00	-0.9098	90.00	-0.7504
40.00	-0.9286	100.00	-0.6854
50.00	-0.9074	110.00	-0.6933
60.00	-0.8991		
70.00	-0.8183		
80.00	-0.7264		
90.00	-0.7352		
100.00	-0.6313		
110.00	-0.5970		

M = 0.793

mfr = 0.312 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1326	-11.61	1.1319
-5.81	1.1661	-2.32	1.0822
-3.77	1.1497	0.00	-0.1476
-2.32	1.0898	0.31	-1.2822
-1.02	0.8687	0.63	-1.5004
-0.49	0.6608	1.25	-1.4431
0.00	-0.1533	1.88	-1.4203
0.31	-1.1772	2.50	-1.1786
0.63	-1.0340	3.12	-1.2831
1.25	-0.9454	3.75	-1.3783
1.88	-1.0113	4.38	-1.3183
2.50	-1.0858	5.00	-1.0923
3.12	-0.9604	6.25	-1.2753
3.75	-0.9189	7.50	-1.4309
4.38	-1.1262	8.75	-1.2704
5.00	-1.0222	10.00	-1.3092
6.25	-1.0312	15.00	-0.8111
7.50	-1.0546	17.50	-1.2857
8.75	-0.9897	20.00	-1.2089
10.00	-1.0434	30.00	-0.9362
12.50	-0.9890	50.00	-0.8993
15.00	-0.9438	60.00	-0.8040
20.00	-0.8581	70.00	-0.7267
20.00	-0.9640	80.00	-0.7032
30.00	-0.9684	90.00	-0.6106
40.00	-0.9230	100.00	-0.5313
50.00	-0.8762	110.00	-0.4847
60.00	-0.8432		
70.00	-0.7914		
80.00	-0.7143		
90.00	-0.6866		
100.00	-0.6079		
110.00	-0.5445		

M = 0.792

mfr = 0.390 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0743	-11.61	1.0712
-5.81	1.1585	-2.32	1.1350
-3.77	1.1639	0.00	0.0105
-2.32	1.1315	0.31	-1.1535
-1.02	0.9936	0.63	-1.3849
-0.49	0.7978	1.25	-1.6628
0.00	0.0285	1.88	-1.7187
0.31	-1.0877	2.50	-1.7488
0.63	-1.3922	3.12	-1.7699
1.25	-1.6787	3.75	-1.7649
1.88	-1.7241	4.38	-1.7433
2.50	-1.7790	5.00	-1.7306
3.12	-1.7576	6.25	-1.7175
3.75	-1.7590	7.50	-1.6800
4.38	-1.7677	8.75	-1.6704
5.00	-1.7342	10.00	-1.6325
6.25	-1.7115	15.00	-1.5466
7.50	-1.6605	17.50	-1.5564
8.75	-1.6591	20.00	-1.4798
10.00	-1.6577	30.00	-1.3918
12.50	-1.5973	50.00	-1.0173
15.00	-1.5777	60.00	-0.6349
20.00	-1.5242	70.00	-0.4566
20.00	-1.5028	80.00	-0.3110
30.00	-1.3859	90.00	-0.1587
40.00	-1.2481	100.00	-0.1196
50.00	-1.1497	110.00	-0.0969
60.00	-0.6178		
70.00	-0.4743		
80.00	-0.2804		
90.00	-0.1727		
100.00	-0.1242		
110.00	-0.1084		

M = 0.791

mfr = 0.447 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0107	-11.61	1.0103
-5.81	1.1267	-2.32	1.1588
-3.77	1.1612	0.00	0.1338
-2.32	1.1579	0.31	-0.9972
-1.02	1.0416	0.63	-1.2809
-0.49	0.8848	1.25	-1.5393
0.00	0.1691	1.88	-1.6301
0.31	-0.9398	2.50	-1.6761
0.63	-1.2955	3.12	-1.6765
1.25	-1.5816	3.75	-1.6761
1.88	-1.6393	4.38	-1.6613
2.50	-1.6652	5.00	-1.6309
3.12	-1.6890	6.25	-1.6091
3.75	-1.6708	7.50	-1.5759
4.38	-1.6617	8.75	-1.5841
5.00	-1.6376	10.00	-1.5330
6.25	-1.6173	15.00	-1.4657
7.50	-1.6054	17.50	-1.3925
8.75	-1.5588	20.00	-1.4157
10.00	-1.5486	30.00	-1.3084
12.50	-1.5230	50.00	-0.7340
15.00	-1.4709	60.00	-0.4393
20.00	-1.4657	70.00	-0.3092
20.00	-1.3933	80.00	-0.1986
30.00	-1.2815	90.00	-0.1856
40.00	-1.1635	100.00	-0.1558
50.00	-0.8313	110.00	-0.1311
60.00	-0.4835		
70.00	-0.2828		
80.00	-0.2116		
90.00	-0.1856		
100.00	-0.1643		
110.00	-0.1317		

M = 0.792

mfr = 0.469 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9850	-11.61	0.9815
-5.81	1.1156	-2.32	1.1635
-3.77	1.1554	0.00	0.1838
-2.32	1.1661	0.31	-0.8904
-1.02	1.0692	0.63	-1.2149
-0.49	0.9341	1.25	-1.4910
0.00	0.2079	1.88	-1.5769
0.31	-0.8748	2.50	-1.6123
0.63	-1.2228	3.12	-1.6244
1.25	-1.5271	3.75	-1.6100
1.88	-1.5817	4.38	-1.6080
2.50	-1.6069	5.00	-1.5766
3.12	-1.6265	6.25	-1.5580
3.75	-1.6244	7.50	-1.5063
4.38	-1.6079	8.75	-1.5179
5.00	-1.5953	10.00	-1.4937
6.25	-1.5376	15.00	-1.4103
7.50	-1.5278	17.50	-1.3679
8.75	-1.5009	20.00	-1.3365
10.00	-1.5012	30.00	-1.2418
12.50	-1.4530	50.00	-0.7502
15.00	-1.3957	60.00	-0.3438
20.00	-1.3519	70.00	-0.2723
20.00	-1.3145	80.00	-0.2223
30.00	-1.2410	90.00	-0.2156
40.00	-1.1293	100.00	-0.1541
50.00	-0.6062	110.00	-0.1349
60.00	-0.3922		
70.00	-0.2538		
80.00	-0.2098		
90.00	-0.2092		
100.00	-0.1672		
110.00	-0.1413		

M = 0.792

mfr = 0.466 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0214	-11.61	0.9379
-5.81	1.1402	-2.32	1.1678
-3.77	1.1657	0.00	0.3308
-2.32	1.1554	0.31	-0.7360
-1.02	1.0186	0.63	-1.0481
-0.49	0.8440	1.25	-1.3550
0.00	0.0976	1.88	-1.4737
0.31	-1.0173	2.50	-1.4946
0.63	-1.3400	3.12	-1.5200
1.25	-1.6203	3.75	-1.5068
1.88	-1.6797	4.38	-1.4590
2.50	-1.7304	5.00	-1.4478
3.12	-1.7469	6.25	-1.4307
3.75	-1.7490	7.50	-1.3405
4.38	-1.7119	8.75	-1.3740
5.00	-1.7059	10.00	-1.3303
6.25	-1.6836	15.00	-1.2292
7.50	-1.6566	17.50	-1.1919
8.75	-1.6336	20.00	-1.1656
10.00	-1.6164	30.00	-1.0485
12.50	-1.6091	50.00	-0.3293
15.00	-1.5585	60.00	-0.3505
20.00	-1.5275	70.00	-0.3164
20.00	-1.4983	80.00	-0.3113
30.00	-1.3905	90.00	-0.2716
40.00	-1.2413	100.00	-0.2067
50.00	-0.7570	110.00	-0.1530
60.00	-0.6333		
70.00	-0.5314		
80.00	-0.3046		
90.00	-0.1935		
100.00	-0.1323		
110.00	-0.1014		

M = 0.791

mfr = 0.521 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.8889	-11.61	0.9038
-5.81	1.0660	-2.32	1.1678
-3.77	1.1364	0.00	0.3236
-2.32	1.1651	0.31	-0.7180
-1.02	1.1187	0.63	-1.0412
-0.49	0.9943	1.25	-1.3591
0.00	0.3739	1.88	-1.4973
0.31	-0.7512	2.50	-1.5326
0.63	-1.1095	3.12	-1.5277
1.25	-1.4051	3.75	-1.5397
1.88	-1.4910	4.38	-1.5232
2.50	-1.5449	5.00	-1.4697
3.12	-1.5264	6.25	-1.4481
3.75	-1.5456	7.50	-1.4075
4.38	-1.5383	8.75	-1.4272
5.00	-1.5008	10.00	-1.3835
6.25	-1.4685	15.00	-1.3149
7.50	-1.4384	17.50	-1.2823
8.75	-1.4149	20.00	-1.2599
10.00	-1.4142	30.00	-1.1607
12.50	-1.3659	50.00	-0.3937
15.00	-1.3105	60.00	-0.2764
20.00	-1.2899	70.00	-0.2716
20.00	-1.2485	80.00	-0.2760
30.00	-1.1375	90.00	-0.2457
40.00	-0.9357	100.00	-0.1933
50.00	-0.3547	110.00	-0.1514
60.00	-0.2752		
70.00	-0.2976		
80.00	-0.2965		
90.00	-0.2464		
100.00	-0.1911		
110.00	-0.1559		

M = 0.792

mfr = 0.590 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7587	-11.61	0.7709
-5.81	0.9624	-2.32	1.1485
-3.77	1.0799	0.00	0.4878
-2.32	1.1480	0.31	-0.4748
-1.02	1.1554	0.63	-0.8228
-0.49	1.0733	1.25	-1.1624
0.00	0.5190	1.88	-1.3242
0.31	-0.5060	2.50	-1.3718
0.63	-0.8751	3.12	-1.3959
1.25	-1.1988	3.75	-1.3820
1.88	-1.3260	4.38	-1.3426
2.50	-1.3962	5.00	-1.3152
3.12	-1.4137	6.25	-1.2939
3.75	-1.3808	7.50	-1.2096
4.38	-1.3861	8.75	-1.2718
5.00	-1.3571	10.00	-1.2296
6.25	-1.3190	15.00	-1.1200
7.50	-1.2592	17.50	-1.1240
8.75	-1.2030	20.00	-1.0890
10.00	-1.2222	30.00	-0.9661
12.50	-1.2236	50.00	-0.3441
15.00	-1.1731	60.00	-0.3893
20.00	-1.1037	70.00	-0.3480
20.00	-1.1051	80.00	-0.3169
30.00	-0.9576	90.00	-0.2765
40.00	-0.4808	100.00	-0.1996
50.00	-0.3289	110.00	-0.1522
60.00	-0.3632		
70.00	-0.3571		
80.00	-0.3252		
90.00	-0.2743		
100.00	-0.1990		
110.00	-0.1581		

Table 9. Continued

(g) Concluded

M = 0.793

mfr = 0.642 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.6068	-11.61	0.6064
-5.81	0.8826	-2.32	1.1184
-3.77	1.0111	0.00	0.6071
-2.32	1.1101	0.31	-0.3015
-1.02	1.1643	0.63	-0.5856
-0.49	1.1266	1.25	-1.0348
0.00	0.6580	1.88	-1.1957
0.31	-0.2997	2.50	-1.2402
0.63	-0.7186	3.12	-1.2719
1.25	-1.0447	3.75	-1.2308
1.88	-1.1989	4.38	-1.2162
2.50	-1.2852	5.00	-1.1577
3.12	-1.2604	6.25	-1.1031
3.75	-1.2447	7.50	-1.0855
4.38	-1.2328	8.75	-1.2080
5.00	-1.2251	10.00	-1.0478
6.25	-1.1659	15.00	-0.9578
7.50	-1.0901	17.50	-0.9440
8.75	-1.0835	20.00	-0.9809
10.00	-1.0475	30.00	-0.4763
12.50	-1.0618	50.00	-0.4351
15.00	-1.0310	60.00	-0.4072
20.00	-0.9881	70.00	-0.3640
20.00	-0.9289	80.00	-0.3297
30.00	-0.4616	90.00	-0.2748
40.00	-0.4394	100.00	-0.2021
50.00	-0.4330	110.00	-0.1488
60.00	-0.4029		
70.00	-0.3663		
80.00	-0.3271		
90.00	-0.2700		
100.00	-0.1973		
110.00	-0.1559		

M = 0.792

mfr = 0.702 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.4014	-11.61	0.4226
-5.81	0.7380	-2.32	1.0351
-3.77	0.9165	0.00	0.7643
-2.32	1.0391	0.31	-0.0961
-1.02	1.1588	0.63	-0.4228
-0.49	1.1588	1.25	-0.8595
0.00	0.7915	1.88	-0.9654
0.31	-0.1217	2.50	-1.0209
0.63	-0.4853	3.12	-1.0234
1.25	-0.9024	3.75	-1.0437
1.88	-0.9714	4.38	-0.9687
2.50	-1.0099	5.00	-0.9099
3.12	-1.0547	6.25	-0.9026
3.75	-1.0270	7.50	-0.8005
4.38	-0.9927	8.75	-0.8205
5.00	-1.0239	10.00	-0.8060
6.25	-0.9273	15.00	-0.6214
7.50	-0.8487	17.50	-0.5487
8.75	-0.7770	20.00	-0.5455
10.00	-0.7213	30.00	-0.5152
12.50	-0.7234	50.00	-0.4240
15.00	-0.6317	60.00	-0.3921
20.00	-0.6138	70.00	-0.3480
20.00	-0.5250	80.00	-0.3118
30.00	-0.5073	90.00	-0.2626
40.00	-0.4708	100.00	-0.1855
50.00	-0.4390	110.00	-0.1373
60.00	-0.3961		
70.00	-0.3563		
80.00	-0.3173		
90.00	-0.2664		
100.00	-0.1914		
110.00	-0.1493		

M = 0.793

mfr = 0.762 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.1751	-11.61	0.1450
-5.81	0.5610	-2.32	0.9552
-3.77	0.7570	0.00	0.8872
-2.32	0.9320	0.31	0.1395
-1.02	1.1259	0.63	-0.1585
-0.49	1.1654	1.25	-0.5443
0.00	0.8910	1.88	-0.6988
0.31	0.0661	2.50	-0.7357
0.63	-0.2102	3.12	-0.5819
1.25	-0.5719	3.75	-0.6213
1.88	-0.6867	4.38	-0.5475
2.50	-0.8073	5.00	-0.4684
3.12	-0.6778	6.25	-0.4733
3.75	-0.5820	7.50	-0.4354
4.38	-0.5667	8.75	-0.7468
5.00	-0.6041	10.00	-0.6351
6.25	-0.5006	15.00	-0.5192
7.50	-0.4981	17.50	-0.5007
8.75	-0.5415	20.00	-0.5192
10.00	-0.5841	30.00	-0.4668
12.50	-0.5439	50.00	-0.4067
15.00	-0.5172	60.00	-0.3730
20.00	-0.5184	70.00	-0.3290
20.00	-0.4725	80.00	-0.2995
30.00	-0.4681	90.00	-0.2547
40.00	-0.4389	100.00	-0.1753
50.00	-0.4015	110.00	-0.1283
60.00	-0.3746		
70.00	-0.3380		
80.00	-0.3041		
90.00	-0.2547		
100.00	-0.1750		
110.00	-0.1391		

Table 9. Continued

(h) M = 0.82

M = 0.818

mfr = 0.261 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1668	-11.61	1.1676
-5.81	1.1752	-2.32	1.0442
-3.77	1.1385	0.00	-0.2142
-2.32	1.0504	0.31	-1.2462
-1.02	0.8114	0.63	-1.3402
-0.49	0.6174	1.25	-0.9549
0.00	-0.2279	1.88	-1.2290
0.31	-0.9048	2.50	-1.0969
0.63	-0.9653	3.12	-1.1490
1.25	-1.0487	3.75	-0.9462
1.88	-0.9703	4.38	-1.1364
2.50	-0.8712	5.00	-1.1109
3.12	-0.9623	6.25	-0.9169
3.75	-0.9939	7.50	-1.0920
4.38	-1.0319	8.75	-1.2365
5.00	-0.9307	10.00	-1.0127
6.25	-0.9344	15.00	-1.0251
7.50	-0.9787	17.50	-0.9092
8.75	-1.0235	20.00	-0.9579
10.00	-1.0242	30.00	-0.9677
12.50	-0.9908	50.00	-0.8147
15.00	-0.9212	60.00	-0.8373
20.00	-0.9172	70.00	-0.7580
20.00	-0.9070	80.00	-0.8022
30.00	-0.8702	90.00	-0.7478
40.00	-0.9189	100.00	-0.7067
50.00	-0.9169	110.00	-0.6439
60.00	-0.8511		
70.00	-0.8260		
80.00	-0.7735		
90.00	-0.7276		
100.00	-0.7009		
110.00	-0.6200		

M = 0.817

mfr = 0.313 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1427	-11.61	1.1468
-5.81	1.1771	-2.32	1.0895
-3.77	1.1597	0.00	-0.1122
-2.32	1.0984	0.31	-1.2344
-1.02	0.8856	0.63	-1.4171
-0.49	0.6976	1.25	-1.2144
0.00	-0.0989	1.88	-0.7381
0.31	-1.0492	2.50	-1.7029
0.63	-1.0825	3.12	-1.5608
1.25	-1.0711	3.75	-1.6446
1.88	-1.0617	4.38	-1.6346
2.50	-1.1411	5.00	-1.4569
3.12	-1.1458	6.25	-1.4495
3.75	-1.1057	7.50	-1.5757
4.38	-0.9703	8.75	-1.4992
5.00	-0.9633	10.00	-1.4312
6.25	-0.9404	15.00	-1.2923
7.50	-1.0502	17.50	-1.1917
8.75	-1.1404	20.00	-1.2677
10.00	-0.9949	30.00	-1.0626
12.50	-0.9579	50.00	-0.8889
15.00	-0.9513	60.00	-0.7962
20.00	-0.9771	70.00	-0.7690
20.00	-1.0065	80.00	-0.6873
30.00	-0.9697	90.00	-0.7243
40.00	-0.9694	100.00	-0.5892
50.00	-0.8902	110.00	-0.4538
60.00	-0.8412		
70.00	-0.7788		
80.00	-0.7429		
90.00	-0.6504		
100.00	-0.5992		
110.00	-0.5709		

M = 0.818

mfr = 0.388 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0878	-11.61	1.0870
-5.81	1.1679	-2.32	1.1412
-3.77	1.1774	0.00	0.0591
-2.32	1.1486	0.31	-1.0527
-1.02	0.9988	0.63	-1.2844
-0.49	0.8132	1.25	-1.5466
0.00	0.0718	1.88	-1.6131
0.31	-1.0273	2.50	-1.6380
0.63	-1.3074	3.12	-1.6399
1.25	-1.5518	3.75	-1.6410
1.88	-1.6134	4.38	-1.6343
2.50	-1.6561	5.00	-1.6221
3.12	-1.6612	6.25	-1.6182
3.75	-1.6561	7.50	-1.5753
4.38	-1.6456	8.75	-1.5728
5.00	-1.6187	10.00	-1.5337
6.25	-1.5982	15.00	-1.4604
7.50	-1.5734	17.50	-1.4260
8.75	-1.5612	20.00	-1.4196
10.00	-1.5424	30.00	-1.3217
12.50	-1.5068	50.00	-1.1551
15.00	-1.4648	60.00	-1.0504
20.00	-1.4463	70.00	-0.5914
20.00	-1.3971	80.00	-0.4882
30.00	-1.2983	90.00	-0.4580
40.00	-1.1783	100.00	-0.3035
50.00	-1.1477	110.00	-0.1361
60.00	-1.0802		
70.00	-0.5653		
80.00	-0.4843		
90.00	-0.3387		
100.00	-0.2502		
110.00	-0.0980		

M = 0.817

mfr = 0.445 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0264	-11.61	1.0290
-5.81	1.1446	-2.32	1.1700
-3.77	1.1727	0.00	0.1661
-2.32	1.1719	0.31	-0.8768
-1.02	1.0683	0.63	-1.1538
-0.49	0.9163	1.25	-1.4393
0.00	0.2119	1.88	-1.5127
0.31	-0.8866	2.50	-1.5581
0.63	-1.1853	3.12	-1.5522
1.25	-1.4747	3.75	-1.5668
1.88	-1.5259	4.38	-1.5498
2.50	-1.5797	5.00	-1.5286
3.12	-1.5659	6.25	-1.5127
3.75	-1.5568	7.50	-1.4646
4.38	-1.5501	8.75	-1.4830
5.00	-1.5238	10.00	-1.4400
6.25	-1.4882	15.00	-1.3833
7.50	-1.4861	17.50	-1.3314
8.75	-1.4666	20.00	-1.3257
10.00	-1.4548	30.00	-1.2500
12.50	-1.3915	50.00	-1.0945
15.00	-1.3741	60.00	-1.0332
20.00	-1.3621	70.00	-0.4894
20.00	-1.3165	80.00	-0.3595
30.00	-1.2203	90.00	-0.2108
40.00	-1.1230	100.00	-0.1309
50.00	-1.0904	110.00	-0.0717
60.00	-1.0228		
70.00	-0.4928		
80.00	-0.3705		
90.00	-0.2409		
100.00	-0.1219		
110.00	-0.0721		

M = 0.817

mfr = 0.519 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9155	-11.61	0.9151
-5.81	1.0761	-2.32	1.1781
-3.77	1.1509	0.00	0.3833
-2.32	1.1771	0.31	-0.6803
-1.02	1.1284	0.63	-0.9550
-0.49	1.0179	1.25	-1.2804
0.00	0.3850	1.88	-1.3803
0.31	-0.6287	2.50	-1.4122
0.63	-0.9852	3.12	-1.4415
1.25	-1.3060	3.75	-1.4023
1.88	-1.3876	4.38	-1.4234
2.50	-1.4220	5.00	-1.3705
3.12	-1.4351	6.25	-1.3574
3.75	-1.4402	7.50	-1.3024
4.38	-1.4028	8.75	-1.3400
5.00	-1.3720	10.00	-1.3069
6.25	-1.3842	15.00	-1.2168
7.50	-1.3367	17.50	-1.1975
8.75	-1.3144	20.00	-1.1778
10.00	-1.3191	30.00	-1.1233
12.50	-1.2831	50.00	-0.9329
15.00	-1.2515	60.00	-0.6304
20.00	-1.1840	70.00	-0.3078
20.00	-1.1599	80.00	-0.2176
30.00	-1.0988	90.00	-0.1696
40.00	-1.0107	100.00	-0.1461
50.00	-0.9761	110.00	-0.1087
60.00	-0.7598		
70.00	-0.2908		
80.00	-0.2240		
90.00	-0.1731		
100.00	-0.1284		
110.00	-0.1183		

M = 0.818

mfr = 0.583 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7794	-11.61	0.8001
-5.81	0.9939	-2.32	1.1616
-3.77	1.0983	0.00	0.5034
-2.32	1.1580	0.31	-0.4211
-1.02	1.1647	0.63	-0.7579
-0.49	1.0967	1.25	-1.1195
0.00	0.5554	1.88	-1.2291
0.31	-0.4331	2.50	-1.2939
0.63	-0.8318	3.12	-1.3164
1.25	-1.1667	3.75	-1.3067
1.88	-1.2429	4.38	-1.2911
2.50	-1.3095	5.00	-1.2462
3.12	-1.3112	6.25	-1.2260
3.75	-1.3203	7.50	-1.1819
4.38	-1.2823	8.75	-1.2054
5.00	-1.2651	10.00	-1.2088
6.25	-1.2371	15.00	-1.0658
7.50	-1.1889	17.50	-1.0514
8.75	-1.1640	20.00	-1.0579
10.00	-1.1970	30.00	-0.9860
12.50	-1.1303	50.00	-0.6856
15.00	-1.1380	60.00	-0.3205
20.00	-1.0809	70.00	-0.2630
20.00	-1.0062	80.00	-0.2592
30.00	-0.9802	90.00	-0.2429
40.00	-0.8878	100.00	-0.1843
50.00	-0.9004	110.00	-0.1302
60.00	-0.3010		
70.00	-0.2509		
80.00	-0.2923		
90.00	-0.2418		
100.00	-0.1700		
110.00	-0.1368		

M = 0.819

mfr = 0.642 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.6237	-11.61	0.6241
-5.81	0.8972	-2.32	1.1209
-3.77	1.0244	0.00	0.6598
-2.32	1.1199	0.31	-0.2284
-1.02	1.1771	0.63	-0.5680
-0.49	1.1361	1.25	-0.9400
0.00	0.6945	1.88	-1.0763
0.31	-0.2151	2.50	-1.1296
0.63	-0.6047	3.12	-1.1716
1.25	-0.9828	3.75	-1.1444
1.88	-1.0908	4.38	-1.1365
2.50	-1.1459	5.00	-1.0869
3.12	-1.1563	6.25	-1.0531
3.75	-1.1644	7.50	-0.9710
4.38	-1.1355	8.75	-1.0999
5.00	-1.1445	10.00	-1.0095
6.25	-1.0693	15.00	-0.9057
7.50	-1.0575	17.50	-0.8908
8.75	-0.9859	20.00	-0.8788
10.00	-1.0219	30.00	-0.8134
12.50	-0.9647	50.00	-0.3473
15.00	-0.9974	60.00	-0.3447
20.00	-0.9603	70.00	-0.3454
20.00	-0.8958	80.00	-0.3209
30.00	-0.8236	90.00	-0.2752
40.00	-0.7580	100.00	-0.1933
50.00	-0.4228	110.00	-0.1426
60.00	-0.3686		
70.00	-0.3213		
80.00	-0.3253		
90.00	-0.2699		
100.00	-0.1874		
110.00	-0.1451		

M = 0.817

mfr = 0.699 and α = 0.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.4552	-11.61	0.4473
-5.81	0.7612	-2.32	1.0575
-3.77	0.9199	0.00	0.7742
-2.32	1.0632	0.31	-0.0515
-1.02	1.1741	0.63	-0.3622
-0.49	1.1689	1.25	-0.7942
0.00	0.7909	1.88	-0.9382
0.31	-0.0350	2.50	-0.9385
0.63	-0.4278	3.12	-1.0164
1.25	-0.8120	3.75	-0.9464
1.88	-0.9424	4.38	-0.9283
2.50	-0.9950	5.00	-0.8984
3.12	-1.0145	6.25	-0.8950
3.75	-0.9936	7.50	-0.8316
4.38	-0.9940	8.75	-0.8891
5.00	-0.9367	10.00	-0.7930
6.25	-0.8397	15.00	-0.7010
7.50	-0.8413	17.50	-0.6685
8.75	-0.7836	20.00	-0.7079
10.00	-0.8545	30.00	-0.6026
12.50	-0.8309	50.00	-0.4685
15.00	-0.7481	60.00	-0.4288
20.00	-0.7884	70.00	-0.3655
20.00	-0.7000	80.00	-0.3235
30.00	-0.5973	90.00	-0.2728
40.00	-0.4440	100.00	-0.1868
50.00	-0.4578	110.00	-0.1368
60.00	-0.4140		
70.00	-0.3712		
80.00	-0.3251		
90.00	-0.2681		
100.00	-0.1873		
110.00	-0.1447		

Table 9. Continued

(h) Concluded

M = 0.818

mfr = 0.764 and α = 0.0°

ϕ = 0°		**ϕ = 180°**	
X/L	**CP**	**X/L**	**CP**
-11.61	0.1974	-11.61	0.1782
-5.81	0.5729	-2.32	0.9562
-3.77	0.7811	0.00	0.9263
-2.32	0.9413	0.31	0.1609
-1.02	1.1408	0.63	-0.1713
-0.49	1.1795	1.25	-0.5636
0.00	0.9162	1.88	-0.6138
0.31	0.1087	2.50	-0.6681
0.63	-0.1571	3.12	-0.5834
1.25	-0.5562	3.75	-0.5602
1.88	-0.6664	4.38	-0.6106
2.50	-0.6183	5.00	-0.4456
3.12	-0.7422	6.25	-0.4333
3.75	-0.6075	7.50	-0.4069
4.38	-0.5562	8.75	-0.6777
5.00	-0.6415	10.00	-0.5988
6.25	-0.5162	15.00	-0.5549
7.50	-0.4916	17.50	-0.5534
8.75	-0.4896	20.00	-0.5818
10.00	-0.5630	30.00	-0.4796
12.50	-0.6149	50.00	-0.4350
15.00	-0.5984	60.00	-0.3967
20.00	-0.5680	70.00	-0.3524
20.00	-0.5175	80.00	-0.3100
30.00	-0.5199	90.00	-0.2623
40.00	-0.4393	100.00	-0.1767
50.00	-0.4600	110.00	-0.1226
60.00	-0.3943		
70.00	-0.3524		
80.00	-0.3086		
90.00	-0.2575		
100.00	-0.1756		
110.00	-0.1328		

Table 9. Continued

(i) M = 0.84

M = 0.842

mfr = 0.262 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1775	-11.61	1.1782
-5.81	1.1855	-2.32	1.0581
-3.77	1.1481	0.00	-0.1461
-2.32	1.0755	0.31	-1.1167
-1.02	0.8276	0.63	-0.9900
-0.49	0.6300	1.25	-1.1709
0.00	-0.1629	1.88	-1.0273
0.31	-0.9866	2.50	-0.9805
0.63	-0.9235	3.12	-0.9537
1.25	-1.0186	3.75	-0.8756
1.88	-0.9430	4.38	-1.0284
2.50	-1.0420	5.00	-1.1636
3.12	-0.9915	6.25	-1.1572
3.75	-0.8458	7.50	-0.9377
4.38	-1.0637	8.75	-0.9336
5.00	-0.9915	10.00	-0.9849
6.25	-0.9928	15.00	-0.9907
7.50	-0.9356	17.50	-0.8069
8.75	-0.8985	20.00	-1.0338
10.00	-0.9499	30.00	-0.8866
12.50	-0.9411	50.00	-0.7846
15.00	-0.9758	60.00	-0.8731
20.00	-0.9447	70.00	-0.8303
20.00	-0.9606	80.00	-0.7733
30.00	-0.9092	90.00	-0.7488
40.00	-0.9358	100.00	-0.7115
50.00	-0.9343	110.00	-0.6545
60.00	-0.8520		
70.00	-0.8278		
80.00	-0.7898		
90.00	-0.7541		
100.00	-0.6995		
110.00	-0.6715		

M = 0.841

mfr = 0.264 and α = 1.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1807	-11.61	1.1734
-5.81	1.1797	-2.32	1.0728
-3.77	1.1365	0.00	-0.1208
-2.32	1.0593	0.31	-1.1954
-1.02	0.8058	0.63	-1.3220
-0.49	0.5925	1.25	-1.5541
0.00	-0.1965	1.88	-1.4250
0.31	-0.8679	2.50	-1.4612
0.63	-0.9471	3.12	-1.6096
1.25	-0.7733	3.75	-1.5563
1.88	-0.8328	4.38	-1.3967
2.50	-0.7479	5.00	-1.5512
3.12	-0.9050	6.25	-1.5318
3.75	-0.8917	7.50	-1.5114
4.38	-0.8400	8.75	-1.4975
5.00	-0.7733	10.00	-1.4378
6.25	-0.8191	15.00	-1.3848
7.50	-0.6743	17.50	-1.3161
8.75	-0.9057	20.00	-1.3976
10.00	-0.8136	30.00	-1.2817
12.50	-0.7430	50.00	-0.9204
15.00	-0.7998	60.00	-0.9039
20.00	-0.7146	70.00	-0.7825
20.00	-0.8295	80.00	-0.7251
30.00	-0.8025	90.00	-0.6889
40.00	-0.8112	100.00	-0.6674
50.00	-0.8084	110.00	-0.4399
60.00	-0.8268		
70.00	-0.8246		
80.00	-0.7685		
90.00	-0.6980		
100.00	-0.7113		
110.00	-0.6954		

M = 0.840

mfr = 0.262 and α = 2.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1821	-11.61	1.1682
-5.81	1.1735	-2.32	1.0909
-3.77	1.1276	0.00	-0.0897
-2.32	1.0438	0.31	-1.1501
-1.02	0.7758	0.63	-1.3599
-0.49	0.5527	1.25	-1.5822
0.00	-0.2427	1.88	-1.6208
0.31	-0.7791	2.50	-1.6591
0.63	-0.6618	3.12	-1.6705
1.25	-0.6800	3.75	-1.6649
1.88	-0.6966	4.38	-1.6292
2.50	-0.6839	5.00	-1.6232
3.12	-0.6311	6.25	-1.6151
3.75	-0.6797	7.50	-1.5873
4.38	-0.6774	8.75	-1.5624
5.00	-0.7028	10.00	-1.5482
6.25	-0.6445	15.00	-1.4716
7.50	-0.6800	17.50	-1.4379
8.75	-0.7295	20.00	-1.4046
10.00	-0.6878	30.00	-1.2824
12.50	-0.7547	50.00	-1.0938
15.00	-0.6388	60.00	-1.0176
20.00	-0.8361	70.00	-0.9703
20.00	-0.7199	80.00	-0.8261
30.00	-0.7651	90.00	-0.5108
40.00	-0.7206	100.00	-0.3625
50.00	-0.7048	110.00	-0.3497
60.00	-0.7313		
70.00	-0.7759		
80.00	-0.7519		
90.00	-0.7347		
100.00	-0.7164		
110.00	-0.7070		

M = 0.841

mfr = 0.258 and α = 3.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1855	-11.61	1.1652
-5.81	1.1710	-2.32	1.1014
-3.77	1.1149	0.00	-0.0384
-2.32	1.0288	0.31	-1.1111
-1.02	0.7416	0.63	-1.3103
-0.49	0.5146	1.25	-1.5423
0.00	-0.2747	1.88	-1.5797
0.31	-0.6236	2.50	-1.6184
0.63	-0.5898	3.12	-1.6251
1.25	-0.7017	3.75	-1.6194
1.88	-0.6428	4.38	-1.6110
2.50	-0.6627	5.00	-1.5909
3.12	-0.6064	6.25	-1.5705
3.75	-0.5735	7.50	-1.5405
4.38	-0.6366	8.75	-1.5202
5.00	-0.5839	10.00	-1.4881
6.25	-0.6080	15.00	-1.4088
7.50	-0.7405	17.50	-1.3781
8.75	-0.6477	20.00	-1.3430
10.00	-0.6282	30.00	-1.2376
12.50	-0.6210	50.00	-1.0596
15.00	-0.6049	60.00	-0.9757
20.00	-0.6607	70.00	-0.9425
20.00	-0.6747	80.00	-0.9045
30.00	-0.6298	90.00	-0.4970
40.00	-0.7053	100.00	-0.3189
50.00	-0.6656	110.00	-0.2300
60.00	-0.6839		
70.00	-0.7190		
80.00	-0.7274		
90.00	-0.7291		
100.00	-0.7107		
110.00	-0.7056		

M = 0.841

mfr = 0.310 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1605	-11.61	1.1591
-5.81	1.1887	-2.32	1.0999
-3.77	1.1695	0.00	-0.0646
-2.32	1.1080	0.31	-1.1592
-1.02	0.8884	0.63	-1.3527
-0.49	0.6982	1.25	-1.5796
0.00	-0.0702	1.88	-1.6194
0.31	-1.1174	2.50	-1.6583
0.63	-1.3606	3.12	-1.6615
1.25	-1.5860	3.75	-1.6601
1.88	-1.6104	4.38	-1.6576
2.50	-1.6709	5.00	-1.6462
3.12	-1.6765	6.25	-1.6255
3.75	-1.6736	7.50	-1.6009
4.38	-1.6716	8.75	-1.5881
5.00	-1.6534	10.00	-1.5613
6.25	-1.6283	15.00	-1.5013
7.50	-1.6036	17.50	-1.4677
8.75	-1.5749	20.00	-1.4439
10.00	-1.5622	30.00	-1.3455
12.50	-1.5374	50.00	-1.1713
15.00	-1.4889	60.00	-1.1219
20.00	-1.4662	70.00	-0.7381
20.00	-1.4419	80.00	-0.6009
30.00	-1.3496	90.00	-0.5749
40.00	-1.2282	100.00	-0.5145
50.00	-1.1789	110.00	-0.4900
60.00	-1.1084		
70.00	-1.0761		
80.00	-0.6141		
90.00	-0.5371		
100.00	-0.4988		
110.00	-0.4635		

M = 0.840

mfr = 0.386 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1020	-11.61	1.1046
-5.81	1.1802	-2.32	1.1597
-3.77	1.1879	0.00	0.1106
-2.32	1.1626	0.31	-0.9968
-1.02	1.0108	0.63	-1.2022
-0.49	0.8433	1.25	-1.4588
0.00	0.1178	1.88	-1.5132
0.31	-0.9585	2.50	-1.5483
0.63	-1.2127	3.12	-1.5499
1.25	-1.4728	3.75	-1.5527
1.88	-1.5168	4.38	-1.5533
2.50	-1.5596	5.00	-1.5362
3.12	-1.5675	6.25	-1.5055
3.75	-1.5691	7.50	-1.4841
4.38	-1.5586	8.75	-1.4784
5.00	-1.5426	10.00	-1.4500
6.25	-1.5021	15.00	-1.3925
7.50	-1.4950	17.50	-1.3430
8.75	-1.4780	20.00	-1.3393
10.00	-1.4545	30.00	-1.2421
12.50	-1.4242	50.00	-1.0958
15.00	-1.3720	60.00	-1.0632
20.00	-1.3694	70.00	-0.9000
20.00	-1.3280	80.00	-0.5336
30.00	-1.2381	90.00	-0.4486
40.00	-1.1394	100.00	-0.4350
50.00	-1.0841	110.00	-0.3187
60.00	-1.0587		
70.00	-1.0224		
80.00	-0.5511		
90.00	-0.4692		
100.00	-0.4252		
110.00	-0.3501		

M = 0.843

mfr = 0.443 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0404	-11.61	1.0393
-5.81	1.1546	-2.32	1.1818
-3.77	1.1851	0.00	0.2338
-2.32	1.1829	0.31	-0.8212
-1.02	1.0780	0.63	-1.0659
-0.49	0.9302	1.25	-1.3347
0.00	0.2511	1.88	-1.4219
0.31	-0.7834	2.50	-1.4657
0.63	-1.0972	3.12	-1.4524
1.25	-1.3701	3.75	-1.4610
1.88	-1.4250	4.38	-1.4372
2.50	-1.4747	5.00	-1.4197
3.12	-1.4708	6.25	-1.4094
3.75	-1.4665	7.50	-1.3749
4.38	-1.4643	8.75	-1.3849
5.00	-1.4380	10.00	-1.3530
6.25	-1.4026	15.00	-1.2749
7.50	-1.3935	17.50	-1.2496
8.75	-1.3688	20.00	-1.2401
10.00	-1.3714	30.00	-1.1588
12.50	-1.3320	50.00	-1.0201
15.00	-1.3042	60.00	-0.9872
20.00	-1.2600	70.00	-0.9606
20.00	-1.2293	80.00	-0.6485
30.00	-1.1716	90.00	-0.4171
40.00	-1.0590	100.00	-0.3865
50.00	-1.0501	110.00	-0.2182
60.00	-1.0183		
70.00	-0.9719		
80.00	-0.7400		
90.00	-0.4417		
100.00	-0.3177		
110.00	-0.2831		

M = 0.842

mfr = 0.468 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0065	-11.61	1.0058
-5.81	1.1408	-2.32	1.1902
-3.77	1.1825	0.00	0.2790
-2.32	1.1905	0.31	-0.7588
-1.02	1.1045	0.63	-1.0237
-0.49	0.9660	1.25	-1.2928
0.00	0.3243	1.88	-1.3735
0.31	-0.7232	2.50	-1.4087
0.63	-1.0617	3.12	-1.4160
1.25	-1.3243	3.75	-1.4218
1.88	-1.3856	4.38	-1.4067
2.50	-1.4275	5.00	-1.3842
3.12	-1.4250	6.25	-1.3678
3.75	-1.4223	7.50	-1.3249
4.38	-1.4083	8.75	-1.3255
5.00	-1.3921	10.00	-1.3027
6.25	-1.3654	15.00	-1.2134
7.50	-1.3498	17.50	-1.1914
8.75	-1.3247	20.00	-1.1907
10.00	-1.3074	30.00	-1.1070
12.50	-1.2879	50.00	-0.9815
15.00	-1.2580	60.00	-0.9643
20.00	-1.2066	70.00	-0.9311
20.00	-1.1821	80.00	-0.6798
30.00	-1.0978	90.00	-0.3595
40.00	-1.0115	100.00	-0.2932
50.00	-1.0132	110.00	-0.1872
60.00	-0.9616		
70.00	-0.9409		
80.00	-0.7132		
90.00	-0.3577		
100.00	-0.2806		
110.00	-0.2207		

Table 9. Continued

(i) Continued

M = 0.840

mfr = 0.468 and α = 1.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0256	-11.61	0.9901
-5.81	1.1521	-2.32	1.1912
-3.77	1.1873	0.00	0.3428
-2.32	1.1858	0.31	-0.6680
-1.02	1.0763	0.63	-0.9381
-0.49	0.9361	1.25	-1.2362
0.00	0.2640	1.88	-1.3401
0.31	-0.7829	2.50	-1.3724
0.63	-1.1207	3.12	-1.3840
1.25	-1.3685	3.75	-1.3735
1.88	-1.4330	4.38	-1.3653
2.50	-1.4851	5.00	-1.3424
3.12	-1.4890	6.25	-1.3156
3.75	-1.4767	7.50	-1.2603
4.38	-1.4555	8.75	-1.2637
5.00	-1.4418	10.00	-1.2552
6.25	-1.4353	15.00	-1.1684
7.50	-1.4076	17.50	-1.1347
8.75	-1.3903	20.00	-1.1285
10.00	-1.3802	30.00	-1.0577
12.50	-1.3342	50.00	-0.9233
15.00	-1.3267	60.00	-0.9061
20.00	-1.2810	70.00	-0.8647
20.00	-1.2343	80.00	-0.5644
30.00	-1.1738	90.00	-0.3134
40.00	-1.0848	100.00	-0.1764
50.00	-1.0548	110.00	-0.1039
60.00	-1.0172		
70.00	-0.8090		
80.00	-0.5311		
90.00	-0.4422		
100.00	-0.3798		
110.00	-0.2721		

M = 0.842

mfr = 0.465 and α = 2.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0423	-11.61	0.9694
-5.81	1.1594	-2.32	1.1931
-3.77	1.1904	0.00	0.4048
-2.32	1.1812	0.31	-0.5884
-1.02	1.0589	0.63	-0.8566
-0.49	0.8957	1.25	-1.1551
0.00	0.2183	1.88	-1.2399
0.31	-0.8581	2.50	-1.2991
0.63	-1.1649	3.12	-1.3238
1.25	-1.4327	3.75	-1.2855
1.88	-1.4685	4.38	-1.2975
2.50	-1.5179	5.00	-1.2486
3.12	-1.5199	6.25	-1.2395
3.75	-1.5075	7.50	-1.1755
4.38	-1.5121	8.75	-1.2140
5.00	-1.4870	10.00	-1.1485
6.25	-1.4730	15.00	-1.1115
7.50	-1.4564	17.50	-1.0493
8.75	-1.4184	20.00	-1.0636
10.00	-1.4242	30.00	-0.9675
12.50	-1.3823	50.00	-0.8538
15.00	-1.3585	60.00	-0.8319
20.00	-1.3390	70.00	-0.7828
20.00	-1.3211	80.00	-0.6900
30.00	-1.2261	90.00	-0.2279
40.00	-1.1647	100.00	-0.1361
50.00	-1.0972	110.00	-0.0831
60.00	-0.8940		
70.00	-0.5796		
80.00	-0.5324		
90.00	-0.5142		
100.00	-0.4416		
110.00	-0.3879		

M = 0.843

mfr = 0.466 and α = 3.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0653	-11.61	0.9422
-5.81	1.1700	-2.32	1.1900
-3.77	1.1898	0.00	0.4843
-2.32	1.1753	0.31	-0.4935
-1.02	1.0280	0.63	-0.7833
-0.49	0.8608	1.25	-1.0997
0.00	0.1474	1.88	-1.2012
0.31	-0.9453	2.50	-1.2680
0.63	-1.2043	3.12	-1.2602
1.25	-1.4539	3.75	-1.2483
1.88	-1.5003	4.38	-1.2416
2.50	-1.5471	5.00	-1.1880
3.12	-1.5680	6.25	-1.1913
3.75	-1.5569	7.50	-1.1077
4.38	-1.5517	8.75	-1.1493
5.00	-1.5357	10.00	-1.1147
6.25	-1.5231	15.00	-1.0230
7.50	-1.4938	17.50	-0.9978
8.75	-1.4721	20.00	-0.9631
10.00	-1.4721	30.00	-0.8861
12.50	-1.4451	50.00	-0.7349
15.00	-1.4042	60.00	-0.7305
20.00	-1.3873	70.00	-0.7214
20.00	-1.3630	80.00	-0.5629
30.00	-1.2969	90.00	-0.2237
40.00	-1.2184	100.00	-0.1518
50.00	-1.1305	110.00	-0.1163
60.00	-1.0058		
70.00	-0.6195		
80.00	-0.5529		
90.00	-0.5114		
100.00	-0.4481		
110.00	-0.3837		

M = 0.843

mfr = 0.520 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.9284	-11.61	0.9270
-5.81	1.0948	-2.32	1.1905
-3.77	1.1567	0.00	0.4019
-2.32	1.1895	0.31	-0.5807
-1.02	1.1437	0.63	-0.8741
-0.49	1.0428	1.25	-1.1773
0.00	0.4360	1.88	-1.2654
0.31	-0.5545	2.50	-1.3080
0.63	-0.9011	3.12	-1.3317
1.25	-1.2333	3.75	-1.3197
1.88	-1.2880	4.38	-1.2849
2.50	-1.3299	5.00	-1.2755
3.12	-1.3280	6.25	-1.2654
3.75	-1.3264	7.50	-1.2229
4.38	-1.3143	8.75	-1.2426
5.00	-1.2828	10.00	-1.2072
6.25	-1.2580	15.00	-1.1331
7.50	-1.2414	17.50	-1.1301
8.75	-1.2233	20.00	-1.1133
10.00	-1.2125	30.00	-1.0391
12.50	-1.2115	50.00	-0.9340
15.00	-1.1770	60.00	-0.8868
20.00	-1.1394	70.00	-0.8806
20.00	-1.1011	80.00	-0.5259
30.00	-1.0380	90.00	-0.2366
40.00	-0.9430	100.00	-0.1821
50.00	-0.9664	110.00	-0.0667
60.00	-0.9072		
70.00	-0.8876		
80.00	-0.5330		
90.00	-0.2548		
100.00	-0.1771		
110.00	-0.0974		

M = 0.844

mfr = 0.584 and α = 0.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.7954	-11.61	0.8056
-5.81	1.0100	-2.32	1.1751
-3.77	1.1091	0.00	0.5430
-2.32	1.1727	0.31	-0.3645
-1.02	1.1788	0.63	-0.6463
-0.49	1.0977	1.25	-0.9777
0.00	0.5911	1.88	-1.1342
0.31	-0.3657	2.50	-1.1913
0.63	-0.7768	3.12	-1.2229
1.25	-1.0500	3.75	-1.2216
1.88	-1.1486	4.38	-1.1765
2.50	-1.2106	5.00	-1.1527
3.12	-1.2275	6.25	-1.1372
3.75	-1.2106	7.50	-1.0174
4.38	-1.1869	8.75	-1.1239
5.00	-1.1755	10.00	-1.0783
6.25	-1.1386	15.00	-1.0105
7.50	-1.1363	17.50	-0.9529
8.75	-1.0854	20.00	-0.9806
10.00	-1.0912	30.00	-0.9314
12.50	-1.0601	50.00	-0.8512
15.00	-1.0388	60.00	-0.8209
20.00	-1.0175	70.00	-0.7126
20.00	-0.9935	80.00	-0.3703
30.00	-0.9303	90.00	-0.1800
40.00	-0.8916	100.00	-0.1158
50.00	-0.8459	110.00	-0.0772
60.00	-0.8034		
70.00	-0.8055		
80.00	-0.3311		
90.00	-0.2028		
100.00	-0.1090		
110.00	-0.0886		

M = 0.841

mfr = 0.639 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.6697	-11.61	0.6554
-5.81	0.9130	-2.32	1.1313
-3.77	1.0418	0.00	0.6698
-2.32	1.1362	0.31	-0.2153
-1.02	1.1875	0.63	-0.5205
-0.49	1.1484	1.25	-0.8734
0.00	0.6808	1.88	-1.0397
0.31	-0.2011	2.50	-1.0699
0.63	-0.5628	3.12	-1.0944
1.25	-0.9020	3.75	-1.0424
1.88	-1.0273	4.38	-1.0417
2.50	-1.0883	5.00	-1.0329
3.12	-1.1007	6.25	-0.9885
3.75	-1.0671	7.50	-0.9651
4.38	-1.0841	8.75	-1.0283
5.00	-1.0802	10.00	-0.9552
6.25	-1.0286	15.00	-0.9067
7.50	-0.9777	17.50	-0.8719
8.75	-0.9444	20.00	-0.8679
10.00	-0.9676	30.00	-0.7992
12.50	-0.9519	50.00	-0.7416
15.00	-0.9143	60.00	-0.6598
20.00	-0.8892	70.00	-0.3106
20.00	-0.8672	80.00	-0.2303
30.00	-0.8246	90.00	-0.2149
40.00	-0.7318	100.00	-0.1610
50.00	-0.7325	110.00	-0.1196
60.00	-0.6893		
70.00	-0.2982		
80.00	-0.2321		
90.00	-0.2216		
100.00	-0.1594		
110.00	-0.1260		

M = 0.843

mfr = 0.640 and α = 1.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.7033	-11.61	0.5998
-5.81	0.9453	-2.32	1.1241
-3.77	1.0650	0.00	0.7333
-2.32	1.1457	0.31	-0.1174
-1.02	1.1870	0.63	-0.3857
-0.49	1.1373	1.25	-0.8221
0.00	0.6388	1.88	-0.9700
0.31	-0.2632	2.50	-0.9826
0.63	-0.6617	3.12	-0.9983
1.25	-0.9401	3.75	-0.9885
1.88	-1.0991	4.38	-0.9601
2.50	-1.1531	5.00	-0.9237
3.12	-1.1534	6.25	-0.8544
3.75	-1.1749	7.50	-0.8308
4.38	-1.1254	8.75	-0.9830
5.00	-1.1293	10.00	-0.8301
6.25	-1.1004	15.00	-0.8044
7.50	-1.0772	17.50	-0.7243
8.75	-1.0444	20.00	-0.7400
10.00	-1.0577	30.00	-0.7079
12.50	-1.0385	50.00	-0.6080
15.00	-0.9929	60.00	-0.5747
20.00	-1.0053	70.00	-0.3662
20.00	-0.9582	80.00	-0.2945
30.00	-0.9147	90.00	-0.2436
40.00	-0.8709	100.00	-0.1774
50.00	-0.8291	110.00	-0.1298
60.00	-0.8055		
70.00	-0.5261		
80.00	-0.2347		
90.00	-0.1632		
100.00	-0.1210		
110.00	-0.0939		

M = 0.842

mfr = 0.638 and α = 2.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.7411	-11.61	0.5718
-5.81	0.9864	-2.32	1.0970
-3.77	1.0913	0.00	0.7934
-2.32	1.1626	0.31	0.0075
-1.02	1.1802	0.63	-0.2948
-0.49	1.1254	1.25	-0.7446
0.00	0.5794	1.88	-0.8596
0.31	-0.3586	2.50	-0.8739
0.63	-0.7544	3.12	-0.9127
1.25	-1.0432	3.75	-0.8754
1.88	-1.1551	4.38	-0.7434
2.50	-1.2424	5.00	-0.7988
3.12	-1.2379	6.25	-0.7610
3.75	-1.2385	7.50	-0.6841
4.38	-1.2095	8.75	-0.8321
5.00	-1.1958	10.00	-0.6746
6.25	-1.1821	15.00	-0.6391
7.50	-1.1348	17.50	-0.5867
8.75	-1.1437	20.00	-0.6072
10.00	-1.1371	30.00	-0.5834
12.50	-1.1094	50.00	-0.5505
15.00	-1.0704	60.00	-0.5010
20.00	-1.0416	70.00	-0.4552
20.00	-1.0494	80.00	-0.3380
30.00	-0.9888	90.00	-0.2724
40.00	-0.9352	100.00	-0.1830
50.00	-0.9040	110.00	-0.1318
60.00	-0.8890		
70.00	-0.6072		
80.00	-0.2776		
90.00	-0.1734		
100.00	-0.1057		
110.00	-0.0714		

Table 9. Continued

(i) Concluded

M = 0.842

mfr = 0.639 and α = 3.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7577	-11.61	0.5008
-5.81	1.0026	-2.32	1.0628
-3.77	1.1041	0.00	0.8357
-2.32	1.1757	0.31	0.0439
-1.02	1.1730	0.63	-0.2043
-0.49	1.0930	1.25	-0.6138
0.00	0.5542	1.88	-0.7272
0.31	-0.4488	2.50	-0.7489
0.63	-0.8286	3.12	-0.7169
1.25	-1.1346	3.75	-0.7159
1.88	-1.2040	4.38	-0.5542
2.50	-1.2800	5.00	-0.6138
3.12	-1.2931	6.25	-0.4682
3.75	-1.2800	7.50	-0.4424
4.38	-1.2784	8.75	-0.6027
5.00	-1.2441	10.00	-0.5292
6.25	-1.2229	15.00	-0.4921
7.50	-1.2216	17.50	-0.4570
8.75	-1.1929	20.00	-0.4943
10.00	-1.2021	30.00	-0.5303
12.50	-1.1858	50.00	-0.4713
15.00	-1.1727	60.00	-0.4694
20.00	-1.1476	70.00	-0.4508
20.00	-1.1054	80.00	-0.3603
30.00	-1.0795	90.00	-0.2750
40.00	-1.0061	100.00	-0.1816
50.00	-1.0039	110.00	-0.1311
60.00	-0.9614		
70.00	-0.5289		
80.00	-0.3674		
90.00	-0.2950		
100.00	-0.1608		
110.00	-0.0919		

M = 0.843

mfr = 0.700 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.4674	-11.61	0.4689
-5.81	0.7674	-2.32	1.0701
-3.77	0.9455	0.00	0.8064
-2.32	1.0632	0.31	0.0248
-1.02	1.1833	0.63	-0.2902
-0.49	1.1836	1.25	-0.7233
0.00	0.8250	1.88	-0.8475
0.31	-0.0462	2.50	-0.8853
0.63	-0.3500	3.12	-0.8547
1.25	-0.7409	3.75	-0.8553
1.88	-0.8557	4.38	-0.8883
2.50	-0.8999	5.00	-0.8148
3.12	-0.9009	6.25	-0.8279
3.75	-0.8928	7.50	-0.7536
4.38	-0.8590	8.75	-0.8539
5.00	-0.8808	10.00	-0.7039
6.25	-0.8206	15.00	-0.7123
7.50	-0.7880	17.50	-0.6337
8.75	-0.7105	20.00	-0.6882
10.00	-0.7591	30.00	-0.6907
12.50	-0.7239	50.00	-0.6140
15.00	-0.7154	60.00	-0.5182
20.00	-0.7261	70.00	-0.3346
20.00	-0.7360	80.00	-0.2849
30.00	-0.6796	90.00	-0.2593
40.00	-0.6411	100.00	-0.1712
50.00	-0.6188	110.00	-0.1262
60.00	-0.5171		
70.00	-0.3489		
80.00	-0.2910		
90.00	-0.2524		
100.00	-0.1724		
110.00	-0.1316		

M = 0.842

mfr = 0.765 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.1918	-11.61	0.1776
-5.81	0.5842	-2.32	0.9631
-3.77	0.7784	0.00	0.9457
-2.32	0.9492	0.31	0.1914
-1.02	1.1522	0.63	-0.0913
-0.49	1.1881	1.25	-0.4252
0.00	0.9528	1.88	-0.5479
0.31	0.1914	2.50	-0.6095
0.63	-0.1475	3.12	-0.6056
1.25	-0.4976	3.75	-0.5610
1.88	-0.5925	4.38	-0.5941
2.50	-0.6316	5.00	-0.4369
3.12	-0.6723	6.25	-0.3904
3.75	-0.6629	7.50	-0.3816
4.38	-0.5309	8.75	-0.6143
5.00	-0.4852	10.00	-0.5383
6.25	-0.4445	15.00	-0.5332
7.50	-0.4556	17.50	-0.5724
8.75	-0.4363	20.00	-0.5823
10.00	-0.4986	30.00	-0.6084
12.50	-0.5671	50.00	-0.5186
15.00	-0.5819	60.00	-0.4252
20.00	-0.5866	70.00	-0.4091
20.00	-0.5582	80.00	-0.3178
30.00	-0.5436	90.00	-0.2633
40.00	-0.5017	100.00	-0.1673
50.00	-0.4992	110.00	-0.1284
60.00	-0.4053		
70.00	-0.3659		
80.00	-0.3228		
90.00	-0.2495		
100.00	-0.1677		
110.00	-0.1244		

M = 0.842

mfr = 0.765 and α = 1.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.2847	-11.61	0.1238
-5.81	0.6390	-2.32	0.9316
-3.77	0.8373	0.00	0.9823
-2.32	1.0023	0.31	0.3022
-1.02	1.1699	0.63	0.0514
-0.49	1.1887	1.25	-0.3510
0.00	0.8821	1.88	-0.4342
0.31	0.1185	2.50	-0.4763
0.63	-0.2242	3.12	-0.4820
1.25	-0.5847	3.75	-0.3382
1.88	-0.6964	4.38	-0.3540
2.50	-0.7984	5.00	-0.3313
3.12	-0.8030	6.25	-0.3044
3.75	-0.7799	7.50	-0.3111
4.38	-0.7665	8.75	-0.5939
5.00	-0.7346	10.00	-0.5096
6.25	-0.6625	15.00	-0.4357
7.50	-0.6189	17.50	-0.4496
8.75	-0.6110	20.00	-0.4540
10.00	-0.6068	30.00	-0.5231
12.50	-0.5957	50.00	-0.4620
15.00	-0.6134	60.00	-0.4419
20.00	-0.6117	70.00	-0.3778
20.00	-0.6134	80.00	-0.3119
30.00	-0.6674	90.00	-0.2588
40.00	-0.6153	100.00	-0.1603
50.00	-0.6143	110.00	-0.1214
60.00	-0.4954		
70.00	-0.3192		
80.00	-0.2937		
90.00	-0.2454		
100.00	-0.1674		
110.00	-0.1202		

M = 0.841

mfr = 0.767 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.3161	-11.61	0.0464
-5.81	0.6974	-2.32	0.8651
-3.77	0.8858	0.00	1.0305
-2.32	1.0390	0.31	0.4041
-1.02	1.1796	0.63	0.1333
-0.49	1.1884	1.25	-0.1612
0.00	0.8430	1.88	-0.2267
0.31	0.0318	2.50	-0.2700
0.63	-0.3097	3.12	-0.2538
1.25	-0.7246	3.75	-0.2100
1.88	-0.8303	4.38	-0.2072
2.50	-0.8580	5.00	-0.2327
3.12	-0.9177	6.25	-0.2485
3.75	-0.9115	7.50	-0.2184
4.38	-0.9154	8.75	-0.4758
5.00	-0.8707	10.00	-0.3012
6.25	-0.8251	15.00	-0.3356
7.50	-0.8137	17.50	-0.3440
8.75	-0.7899	20.00	-0.3550
10.00	-0.7909	30.00	-0.4312
12.50	-0.8121	50.00	-0.4323
15.00	-0.7949	60.00	-0.4008
20.00	-0.7492	70.00	-0.3682
20.00	-0.7517	80.00	-0.3173
30.00	-0.7651	90.00	-0.2506
40.00	-0.7196	100.00	-0.1674
50.00	-0.7008	110.00	-0.1147
60.00	-0.5193		
70.00	-0.3096		
80.00	-0.2611		
90.00	-0.2269		
100.00	-0.1595		
110.00	-0.1235		

M = 0.843

mfr = 0.758 and α = 3.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.3983	-11.61	0.0111
-5.81	0.7632	-2.32	0.8365
-3.77	0.9268	0.00	1.0652
-2.32	1.0785	0.31	0.5184
-1.02	1.1851	0.63	0.2655
-0.49	1.1809	1.25	-0.0428
0.00	0.7835	1.88	-0.1203
0.31	-0.0785	2.50	-0.1773
0.63	-0.4634	3.12	-0.1500
1.25	-0.8191	3.75	-0.1176
1.88	-0.9437	4.38	-0.1371
2.50	-0.9850	5.00	-0.1041
3.12	-0.9948	6.25	-0.1260
3.75	-0.9886	7.50	-0.1853
4.38	-1.0162	8.75	-0.3750
5.00	-1.0039	10.00	-0.2335
6.25	-0.9218	15.00	-0.2789
7.50	-0.8974	17.50	-0.3026
8.75	-0.8971	20.00	-0.2913
10.00	-0.9118	30.00	-0.3659
12.50	-0.9395	50.00	-0.3889
15.00	-0.8989	60.00	-0.3574
20.00	-0.8994	70.00	-0.3490
20.00	-0.8699	80.00	-0.3114
30.00	-0.8809	90.00	-0.2515
40.00	-0.7678	100.00	-0.1608
50.00	-0.7787	110.00	-0.1162
60.00	-0.7754		
70.00	-0.3169		
80.00	-0.2068		
90.00	-0.1980		
100.00	-0.1371		
110.00	-0.1062		

Table 9. Continued

(j) M = 0.87

M = 0.866

mfr = 0.254 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1920	-11.61	1.1913
-5.81	1.1940	-2.32	1.0721
-3.77	1.1588	0.00	-0.1269
-2.32	1.0785	0.31	-1.1462
-1.02	0.8335	0.63	-1.3462
-0.49	0.6350	1.25	-1.5456
0.00	-0.1562	1.88	-1.5800
0.31	-1.1101	2.50	-1.6149
0.63	-1.3464	3.12	-1.6221
1.25	-1.5431	3.75	-1.6220
1.88	-1.5683	4.38	-1.6162
2.50	-1.6221	5.00	-1.6026
3.12	-1.6300	6.25	-1.5844
3.75	-1.6237	7.50	-1.5590
4.38	-1.6199	8.75	-1.5453
5.00	-1.6111	10.00	-1.5335
6.25	-1.5897	15.00	-1.4684
7.50	-1.5673	17.50	-1.4390
8.75	-1.5506	20.00	-1.4182
10.00	-1.5380	30.00	-1.3331
12.50	-1.4933	50.00	-1.1603
15.00	-1.4769	60.00	-1.1267
20.00	-1.4431	70.00	-1.0690
20.00	-1.4189	80.00	-1.0375
30.00	-1.3269	90.00	-0.7854
40.00	-1.2220	100.00	-0.5896
50.00	-1.1621	110.00	-0.5077
60.00	-1.1164		
70.00	-1.0761		
80.00	-1.0377		
90.00	-0.9053		
100.00	-0.5815		
110.00	-0.5403		

M = 0.868

mfr = 0.307 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1735	-11.61	1.1714
-5.81	1.2021	-2.32	1.1185
-3.77	1.1829	0.00	-0.0161
-2.32	1.1249	0.31	-1.0604
-1.02	0.9229	0.63	-1.2521
-0.49	0.7250	1.25	-1.4760
0.00	-0.0309	1.88	-1.5114
0.31	-1.0286	2.50	-1.5485
0.63	-1.2656	3.12	-1.5535
1.25	-1.4743	3.75	-1.5538
1.88	-1.5057	4.38	-1.5524
2.50	-1.5601	5.00	-1.5337
3.12	-1.5613	6.25	-1.5173
3.75	-1.5689	7.50	-1.4955
4.38	-1.5588	8.75	-1.4816
5.00	-1.5450	10.00	-1.4541
6.25	-1.5237	15.00	-1.4030
7.50	-1.4948	17.50	-1.3684
8.75	-1.4794	20.00	-1.3497
10.00	-1.4646	30.00	-1.2585
12.50	-1.4375	50.00	-1.0992
15.00	-1.3921	60.00	-1.0692
20.00	-1.3769	70.00	-1.0250
20.00	-1.3486	80.00	-1.0052
30.00	-1.2624	90.00	-0.9918
40.00	-1.1629	100.00	-0.7920
50.00	-1.1018	110.00	-0.4791
60.00	-1.0764		
70.00	-1.0296		
80.00	-1.0023		
90.00	-0.9978		
100.00	-0.6873		
110.00	-0.4728		

M = 0.867

mfr = 0.385 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.1165	-11.61	1.1154
-5.81	1.1912	-2.32	1.1740
-3.77	1.2019	0.00	0.1572
-2.32	1.1753	0.31	-0.8951
-1.02	1.0242	0.63	-1.1106
-0.49	0.8600	1.25	-1.3468
0.00	0.1658	1.88	-1.4115
0.31	-0.8620	2.50	-1.4409
0.63	-1.1259	3.12	-1.4488
1.25	-1.3691	3.75	-1.4519
1.88	-1.4120	4.38	-1.4422
2.50	-1.4627	5.00	-1.4317
3.12	-1.4716	6.25	-1.4075
3.75	-1.4706	7.50	-1.3978
4.38	-1.4564	8.75	-1.3787
5.00	-1.4315	10.00	-1.3606
6.25	-1.4176	15.00	-1.2965
7.50	-1.3817	17.50	-1.2908
8.75	-1.3707	20.00	-1.2505
10.00	-1.3616	30.00	-1.1595
12.50	-1.3118	50.00	-1.0246
15.00	-1.2937	60.00	-1.0140
20.00	-1.2706	70.00	-0.9790
20.00	-1.2339	80.00	-0.9567
30.00	-1.1666	90.00	-0.9362
40.00	-1.0770	100.00	-0.5660
50.00	-1.0299	110.00	-0.4169
60.00	-1.0101		
70.00	-0.9602		
80.00	-0.9507		
90.00	-0.9405		
100.00	-0.5383		
110.00	-0.4046		

M = 0.865

mfr = 0.446 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0607	-11.61	1.0522
-5.81	1.1631	-2.32	1.1932
-3.77	1.1954	0.00	0.2597
-2.32	1.1950	0.31	-0.7560
-1.02	1.0923	0.63	-0.9817
-0.49	0.9583	1.25	-1.2481
0.00	0.2710	1.88	-1.3360
0.31	-0.7062	2.50	-1.3720
0.63	-1.0091	3.12	-1.3816
1.25	-1.2835	3.75	-1.3837
1.88	-1.3441	4.38	-1.3630
2.50	-1.3943	5.00	-1.3407
3.12	-1.3890	6.25	-1.3219
3.75	-1.3830	7.50	-1.2903
4.38	-1.3552	8.75	-1.2919
5.00	-1.3631	10.00	-1.2712
6.25	-1.3233	15.00	-1.2215
7.50	-1.3138	17.50	-1.1779
8.75	-1.2851	20.00	-1.1715
10.00	-1.2813	30.00	-1.0903
12.50	-1.2614	50.00	-0.9951
15.00	-1.2150	60.00	-0.9447
20.00	-1.1871	70.00	-0.9195
20.00	-1.1768	80.00	-0.9075
30.00	-1.0990	90.00	-0.7514
40.00	-1.0198	100.00	-0.4276
50.00	-0.9847	110.00	-0.3574
60.00	-0.9566		
70.00	-0.9270		
80.00	-0.9047		
90.00	-0.8252		
100.00	-0.4665		
110.00	-0.3540		

M = 0.868

mfr = 0.468 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0332	-11.61	1.0255
-5.81	1.1544	-2.32	1.2011
-3.77	1.1943	0.00	0.3378
-2.32	1.2013	0.31	-0.6551
-1.02	1.1193	0.63	-0.9127
-0.49	1.0000	1.25	-1.2104
0.00	0.3370	1.88	-1.2761
0.31	-0.6565	2.50	-1.3061
0.63	-0.9733	3.12	-1.3296
1.25	-1.2349	3.75	-1.3089
1.88	-1.2976	4.38	-1.3105
2.50	-1.3451	5.00	-1.2789
3.12	-1.3243	6.25	-1.2783
3.75	-1.3309	7.50	-1.2355
4.38	-1.3174	8.75	-1.2444
5.00	-1.2910	10.00	-1.2044
6.25	-1.2756	15.00	-1.1393
7.50	-1.2589	17.50	-1.1305
8.75	-1.2274	20.00	-1.1192
10.00	-1.2230	30.00	-1.0460
12.50	-1.2054	50.00	-0.9322
15.00	-1.1766	60.00	-0.9149
20.00	-1.1281	70.00	-0.8817
20.00	-1.1106	80.00	-0.8834
30.00	-1.0409	90.00	-0.8817
40.00	-0.9517	100.00	-0.5088
50.00	-0.9459	110.00	-0.3746
60.00	-0.9226		
70.00	-0.9036		
80.00	-0.8891		
90.00	-0.8097		
100.00	-0.3744		
110.00	-0.3832		

M = 0.865

mfr = 0.469 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	1.0625	-11.61	0.9808
-5.81	1.1742	-2.32	1.2021
-3.77	1.2005	0.00	0.4136
-2.32	1.1916	0.31	-0.5214
-1.02	1.0730	0.63	-0.7963
-0.49	0.9209	1.25	-1.0942
0.00	0.2303	1.88	-1.1888
0.31	-0.7919	2.50	-1.2292
0.63	-1.0810	3.12	-1.2347
1.25	-1.3234	3.75	-1.2335
1.88	-1.3799	4.38	-1.2113
2.50	-1.4247	5.00	-1.1700
3.12	-1.4285	6.25	-1.1718
3.75	-1.4285	7.50	-1.1126
4.38	-1.4263	8.75	-1.1455
5.00	-1.4073	10.00	-1.1023
6.25	-1.3941	15.00	-1.0398
7.50	-1.3587	17.50	-1.0249
8.75	-1.3575	20.00	-1.0079
10.00	-1.3559	30.00	-0.9164
12.50	-1.3250	50.00	-0.8324
15.00	-1.2861	60.00	-0.7853
20.00	-1.2641	70.00	-0.7803
20.00	-1.2413	80.00	-0.7483
30.00	-1.1472	90.00	-0.7810
40.00	-1.0989	100.00	-0.6678
50.00	-1.0605	110.00	-0.2263
60.00	-1.0441		
70.00	-0.9874		
80.00	-0.6209		
90.00	-0.4876		
100.00	-0.4599		
110.00	-0.4248		

M = 0.866

mfr = 0.521 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.9411	-11.61	0.9316
-5.81	1.1015	-2.32	1.2031
-3.77	1.1748	0.00	0.4580
-2.32	1.2030	0.31	-0.5409
-1.02	1.1604	0.63	-0.7814
-0.49	1.0547	1.25	-1.0978
0.00	0.4793	1.88	-1.1868
0.31	-0.4850	2.50	-1.2444
0.63	-0.8397	3.12	-1.2573
1.25	-1.1487	3.75	-1.2430
1.88	-1.2118	4.38	-1.2259
2.50	-1.2546	5.00	-1.1945
3.12	-1.2436	6.25	-1.1646
3.75	-1.2499	7.50	-1.1378
4.38	-1.2389	8.75	-1.1720
5.00	-1.2184	10.00	-1.1463
6.25	-1.2112	15.00	-1.0879
7.50	-1.1770	17.50	-1.0627
8.75	-1.1433	20.00	-1.0417
10.00	-1.1348	30.00	-0.9762
12.50	-1.1190	50.00	-0.8866
15.00	-1.0940	60.00	-0.8742
20.00	-1.0620	70.00	-0.8445
20.00	-1.0101	80.00	-0.8388
30.00	-0.9920	90.00	-0.8200
40.00	-0.9085	100.00	-0.4909
50.00	-0.8929	110.00	-0.2868
60.00	-0.8797		
70.00	-0.8494		
80.00	-0.8279		
90.00	-0.8327		
100.00	-0.4173		
110.00	-0.2431		

M = 0.868

mfr = 0.583 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.8188	-11.61	0.8195
-5.81	1.0229	-2.32	1.1836
-3.77	1.1214	0.00	0.5880
-2.32	1.1805	0.31	-0.3011
-1.02	1.1920	0.63	-0.5957
-0.49	1.1243	1.25	-0.9202
0.00	0.6079	1.88	-1.0533
0.31	-0.2866	2.50	-1.1177
0.63	-0.6654	3.12	-1.1589
1.25	-0.9796	3.75	-1.1230
1.88	-1.0552	4.38	-1.1113
2.50	-1.1332	5.00	-1.0756
3.12	-1.1395	6.25	-1.0607
3.75	-1.1364	7.50	-1.0027
4.38	-1.1052	8.75	-1.0301
5.00	-1.1106	10.00	-1.0079
6.25	-1.0671	15.00	-0.9645
7.50	-1.0536	17.50	-0.9323
8.75	-1.0155	20.00	-0.9213
10.00	-0.9982	30.00	-0.8651
12.50	-0.9881	50.00	-0.8078
15.00	-0.9618	60.00	-0.7954
20.00	-0.9337	70.00	-0.7636
20.00	-0.9316	80.00	-0.7576
30.00	-0.8754	90.00	-0.6581
40.00	-0.8260	100.00	-0.2608
50.00	-0.8024	110.00	-0.1475
60.00	-0.7914		
70.00	-0.7798		
80.00	-0.7689		
90.00	-0.6975		
100.00	-0.2806		
110.00	-0.1676		

Table 9. Continued

(j) Concluded

M = 0.867

mfr = 0.641 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.6807	-11.61	0.6687
-5.81	0.9267	-2.32	1.1435
-3.77	1.0559	0.00	0.7037
-2.32	1.1519	0.31	-0.1606
-1.02	1.2030	0.63	-0.4369
-0.49	1.1704	1.25	-0.8063
0.00	0.7222	1.88	-0.9454
0.31	-0.1186	2.50	-0.9823
0.63	-0.4922	3.12	-1.0086
1.25	-0.8012	3.75	-0.9979
1.88	-0.9434	4.38	-0.9864
2.50	-1.0004	5.00	-0.9210
3.12	-1.0263	6.25	-0.9066
3.75	-0.9903	7.50	-0.8941
4.38	-1.0130	8.75	-0.9590
5.00	-0.9683	10.00	-0.8984
6.25	-0.9547	15.00	-0.8265
7.50	-0.8724	17.50	-0.8343
8.75	-0.8847	20.00	-0.8272
10.00	-0.8875	30.00	-0.7953
12.50	-0.8913	50.00	-0.7223
15.00	-0.8405	60.00	-0.6936
20.00	-0.8276	70.00	-0.6989
20.00	-0.7961	80.00	-0.6947
30.00	-0.7668	90.00	-0.3727
40.00	-0.7107	100.00	-0.1694
50.00	-0.7101	110.00	-0.0656
60.00	-0.7218		
70.00	-0.7155		
80.00	-0.6963		
90.00	-0.4428		
100.00	-0.1595		
110.00	-0.0732		

M = 0.868

mfr = 0.701 and α = 0.1°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.4815	-11.61	0.4808
-5.81	0.7923	-2.32	1.0923
-3.77	0.9413	0.00	0.8278
-2.32	1.0860	0.31	0.0542
-1.02	1.1992	0.63	-0.2288
-0.49	1.1959	1.25	-0.6611
0.00	0.8507	1.88	-0.7840
0.31	0.0234	2.50	-0.8023
0.63	-0.2942	3.12	-0.8146
1.25	-0.6274	3.75	-0.8105
1.88	-0.7691	4.38	-0.7341
2.50	-0.8179	5.00	-0.7496
3.12	-0.8611	6.25	-0.7171
3.75	-0.7946	7.50	-0.7046
4.38	-0.8318	8.75	-0.8478
5.00	-0.8145	10.00	-0.7127
6.25	-0.7124	15.00	-0.6943
7.50	-0.6869	17.50	-0.6600
8.75	-0.6976	20.00	-0.6144
10.00	-0.7420	30.00	-0.6597
12.50	-0.7052	50.00	-0.6324
15.00	-0.6614	60.00	-0.6232
20.00	-0.6684	70.00	-0.6084
20.00	-0.6193	80.00	-0.6176
30.00	-0.6690	90.00	-0.4293
40.00	-0.6193	100.00	-0.1341
50.00	-0.6003	110.00	-0.0754
60.00	-0.6289		
70.00	-0.6200		
80.00	-0.6285		
90.00	-0.4428		
100.00	-0.1284		
110.00	-0.0768		

M = 0.868

mfr = 0.760 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.2399	-11.61	0.2550
-5.81	0.6088	-2.32	0.9997
-3.77	0.8076	0.00	0.9308
-2.32	0.9833	0.31	0.2205
-1.02	1.1592	0.63	-0.0263
-0.49	1.2036	1.25	-0.4630
0.00	0.9626	1.88	-0.5381
0.31	0.2036	2.50	-0.5554
0.63	-0.1269	3.12	-0.5769
1.25	-0.4748	3.75	-0.6251
1.88	-0.5715	4.38	-0.5857
2.50	-0.6358	5.00	-0.5186
3.12	-0.5775	6.25	-0.5171
3.75	-0.5854	7.50	-0.3465
4.38	-0.5627	8.75	-0.5632
5.00	-0.5523	10.00	-0.5246
6.25	-0.4251	15.00	-0.5168
7.50	-0.4245	17.50	-0.5179
8.75	-0.3891	20.00	-0.5469
10.00	-0.4616	30.00	-0.5897
12.50	-0.5067	50.00	-0.5805
15.00	-0.5300	60.00	-0.5763
20.00	-0.5489	70.00	-0.5557
20.00	-0.4949	80.00	-0.5886
30.00	-0.5744	90.00	-0.3019
40.00	-0.5625	100.00	-0.1227
50.00	-0.5719	110.00	-0.0810
60.00	-0.5713		
70.00	-0.5794		
80.00	-0.5510		
90.00	-0.3283		
100.00	-0.1227		
110.00	-0.0838		

Table 9. Continued

(k) M = 0.89

M = 0.892

mfr = 0.255 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.2041	-11.61	1.2048
-5.81	1.2074	-2.32	1.0831
-3.77	1.1719	0.00	-0.0734
-2.32	1.0934	0.31	-1.0754
-1.02	0.8648	0.63	-1.2581
-0.49	0.6645	1.25	-1.4560
0.00	-0.0922	1.88	-1.4783
0.31	-1.0535	2.50	-1.5171
0.63	-1.2628	3.12	-1.5184
1.25	-1.4537	3.75	-1.5278
1.88	-1.4741	4.38	-1.5105
2.50	-1.5227	5.00	-1.5092
3.12	-1.5300	6.25	-1.4905
3.75	-1.5374	7.50	-1.4701
4.38	-1.5264	8.75	-1.4615
5.00	-1.5178	10.00	-1.4468
6.25	-1.4974	15.00	-1.3830
7.50	-1.4681	17.50	-1.3692
8.75	-1.4607	20.00	-1.3253
10.00	-1.4516	30.00	-1.2364
12.50	-1.4192	50.00	-1.0802
15.00	-1.3894	60.00	-1.0490
20.00	-1.3636	70.00	-1.0136
20.00	-1.3282	80.00	-0.9855
30.00	-1.2533	90.00	-0.9694
40.00	-1.1495	100.00	-0.9450
50.00	-1.0899	110.00	-0.8835
60.00	-1.0529		
70.00	-1.0123		
80.00	-0.9848		
90.00	-0.9716		
100.00	-0.9397		
110.00	-0.8950		

M = 0.891

mfr = 0.307 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1878	-11.61	1.1851
-5.81	1.2141	-2.32	1.1313
-3.77	1.1954	0.00	0.0179
-2.32	1.1368	0.31	-0.9849
-1.02	0.9384	0.63	-1.1874
-0.49	0.7444	1.25	-1.3977
0.00	0.0103	1.88	-1.4319
0.31	-0.9501	2.50	-1.4671
0.63	-1.1951	3.12	-1.4753
1.25	-1.3998	3.75	-1.4692
1.88	-1.4267	4.38	-1.4581
2.50	-1.4753	5.00	-1.4547
3.12	-1.4805	6.25	-1.4330
3.75	-1.4851	7.50	-1.4170
4.38	-1.4750	8.75	-1.4007
5.00	-1.4674	10.00	-1.3912
6.25	-1.4374	15.00	-1.3324
7.50	-1.4261	17.50	-1.2881
8.75	-1.3998	20.00	-1.2784
10.00	-1.3842	30.00	-1.1945
12.50	-1.3468	50.00	-1.0485
15.00	-1.3150	60.00	-1.0223
20.00	-1.2964	70.00	-0.9856
20.00	-1.2620	80.00	-0.9578
30.00	-1.1982	90.00	-0.9519
40.00	-1.1035	100.00	-0.9275
50.00	-1.0419	110.00	-0.8808
60.00	-1.0221		
70.00	-0.9849		
80.00	-0.9611		
90.00	-0.9477		
100.00	-0.9203		
110.00	-0.8834		

M = 0.891

mfr = 0.385 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.1294	-11.61	1.1307
-5.81	1.2055	-2.32	1.1859
-3.77	1.2145	0.00	0.1993
-2.32	1.1922	0.31	-0.8391
-1.02	1.0530	0.63	-1.0423
-0.49	0.8765	1.25	-1.2752
0.00	0.2013	1.88	-1.3214
0.31	-0.7954	2.50	-1.3581
0.63	-1.0420	3.12	-1.3613
1.25	-1.2937	3.75	-1.3726
1.88	-1.3310	4.38	-1.3541
2.50	-1.3712	5.00	-1.3515
3.12	-1.3751	6.25	-1.3239
3.75	-1.3785	7.50	-1.3120
4.38	-1.3635	8.75	-1.2945
5.00	-1.3576	10.00	-1.2711
6.25	-1.3347	15.00	-1.2271
7.50	-1.3053	17.50	-1.2013
8.75	-1.2924	20.00	-1.1693
10.00	-1.2918	30.00	-1.0837
12.50	-1.2496	50.00	-0.9756
15.00	-1.2084	60.00	-0.9609
20.00	-1.2003	70.00	-0.9440
20.00	-1.1783	80.00	-0.8976
30.00	-1.1122	90.00	-0.8945
40.00	-1.0047	100.00	-0.8718
50.00	-0.9652	110.00	-0.8281
60.00	-0.9540		
70.00	-0.9292		
80.00	-0.8974		
90.00	-0.8911		
100.00	-0.8683		
110.00	-0.8336		

M = 0.892

mfr = 0.445 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0721	-11.61	1.0728
-5.81	1.1795	-2.32	1.2086
-3.77	1.2093	0.00	0.3037
-2.32	1.2079	0.31	-0.6714
-1.02	1.1092	0.63	-0.9094
-0.49	0.9820	1.25	-1.1595
0.00	0.3261	1.88	-1.2458
0.31	-0.6493	2.50	-1.2743
0.63	-0.9492	3.12	-1.2830
1.25	-1.1806	3.75	-1.2802
1.88	-1.2502	4.38	-1.2701
2.50	-1.2885	5.00	-1.2534
3.12	-1.2961	6.25	-1.2383
3.75	-1.2888	7.50	-1.2090
4.38	-1.2808	8.75	-1.2103
5.00	-1.2600	10.00	-1.1757
6.25	-1.2316	15.00	-1.1355
7.50	-1.2267	17.50	-1.1015
8.75	-1.2004	20.00	-1.0775
10.00	-1.1965	30.00	-1.0246
12.50	-1.1671	50.00	-0.9270
15.00	-1.1308	60.00	-0.9050
20.00	-1.1167	70.00	-0.8751
20.00	-1.1022	80.00	-0.8703
30.00	-1.0375	90.00	-0.8638
40.00	-0.9455	100.00	-0.8439
50.00	-0.9110	110.00	-0.7889
60.00	-0.8997		
70.00	-0.8872		
80.00	-0.8725		
90.00	-0.8559		
100.00	-0.8395		
110.00	-0.8006		

M = 0.893

mfr = 0.468 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0468	-11.61	1.0393
-5.81	1.1650	-2.32	1.2129
-3.77	1.2058	0.00	0.3580
-2.32	1.2144	0.31	-0.6034
-1.02	1.1273	0.63	-0.8494
-0.49	1.0064	1.25	-1.1184
0.00	0.3908	1.88	-1.2036
0.31	-0.5933	2.50	-1.2411
0.63	-0.8947	3.12	-1.2359
1.25	-1.1484	3.75	-1.2432
1.88	-1.2107	4.38	-1.2208
2.50	-1.2550	5.00	-1.2133
3.12	-1.2528	6.25	-1.1875
3.75	-1.2385	7.50	-1.1389
4.38	-1.2284	8.75	-1.1807
5.00	-1.2211	10.00	-1.1304
6.25	-1.1964	15.00	-1.0953
7.50	-1.1771	17.50	-1.0603
8.75	-1.1478	20.00	-1.0497
10.00	-1.1490	30.00	-0.9921
12.50	-1.1072	50.00	-0.8940
15.00	-1.0948	60.00	-0.8875
20.00	-1.0812	70.00	-0.8445
20.00	-1.0487	80.00	-0.8511
30.00	-0.9737	90.00	-0.8483
40.00	-0.9227	100.00	-0.8116
50.00	-0.9002	110.00	-0.7674
60.00	-0.8622		
70.00	-0.8562		
80.00	-0.8394		
90.00	-0.8520		
100.00	-0.8089		
110.00	-0.7783		

M = 0.891

mfr = 0.466 and α = 2.1°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	1.0633	-11.61	1.0001
-5.81	1.1816	-2.32	1.2150
-3.77	1.2143	0.00	0.4598
-2.32	1.2028	0.31	-0.4750
-1.02	1.0877	0.63	-0.7064
-0.49	0.9413	1.25	-1.0150
0.00	0.3137	1.88	-1.0921
0.31	-0.7307	2.50	-1.1399
0.63	-1.0041	3.12	-1.1574
1.25	-1.2413	3.75	-1.1440
1.88	-1.2924	4.38	-1.1280
2.50	-1.3429	5.00	-1.0964
3.12	-1.3481	6.25	-1.0710
3.75	-1.3365	7.50	-1.0284
4.38	-1.3398	8.75	-1.0527
5.00	-1.3178	10.00	-1.0291
6.25	-1.3007	15.00	-0.9648
7.50	-1.2869	17.50	-0.9331
8.75	-1.2431	20.00	-0.9242
10.00	-1.2578	30.00	-0.8674
12.50	-1.2303	50.00	-0.7766
15.00	-1.2044	60.00	-0.7501
20.00	-1.1917	70.00	-0.7329
20.00	-1.1696	80.00	-0.7512
30.00	-1.1014	90.00	-0.7305
40.00	-1.0358	100.00	-0.7161
50.00	-0.9915	110.00	-0.6627
60.00	-0.9766		
70.00	-0.9685		
80.00	-0.9328		
90.00	-0.8837		
100.00	-0.4886		
110.00	-0.4561		

M = 0.893

mfr = 0.520 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.9634	-11.61	0.9579
-5.81	1.1170	-2.32	1.2154
-3.77	1.1854	0.00	0.4744
-2.32	1.2152	0.31	-0.4701
-1.02	1.1751	0.63	-0.7036
-0.49	1.0767	1.25	-1.0208
0.00	0.5079	1.88	-1.1191
0.31	-0.4404	2.50	-1.1494
0.63	-0.7753	3.12	-1.1595
1.25	-1.0358	3.75	-1.1456
1.88	-1.1140	4.38	-1.1309
2.50	-1.1702	5.00	-1.1038
3.12	-1.1524	6.25	-1.1102
3.75	-1.1522	7.50	-1.0599
4.38	-1.1537	8.75	-1.0790
5.00	-1.1271	10.00	-1.0564
6.25	-1.1045	15.00	-0.9902
7.50	-1.0697	17.50	-0.9964
8.75	-1.0599	20.00	-0.9686
10.00	-1.0715	30.00	-0.9188
12.50	-1.0547	50.00	-0.8427
15.00	-1.0136	60.00	-0.8025
20.00	-1.0153	70.00	-0.8008
20.00	-0.9673	80.00	-0.7967
30.00	-0.9170	90.00	-0.8228
40.00	-0.8582	100.00	-0.7700
50.00	-0.8446	110.00	-0.7336
60.00	-0.8346		
70.00	-0.8149		
80.00	-0.8074		
90.00	-0.8040		
100.00	-0.7806		
110.00	-0.7481		

M = 0.891

mfr = 0.640 and α = 0.0°

φ = 0°		φ = 180°	
X/L	CP	X/L	CP
-11.61	0.6935	-11.61	0.6956
-5.81	0.9321	-2.32	1.1615
-3.77	1.0695	0.00	0.7338
-2.32	1.1594	0.31	-0.0786
-1.02	1.2141	0.63	-0.3587
-0.49	1.1803	1.25	-0.7268
0.00	0.7594	1.88	-0.8159
0.31	-0.0854	2.50	-0.9016
0.63	-0.4366	3.12	-0.9322
1.25	-0.7943	3.75	-0.9246
1.88	-0.8479	4.38	-0.9239
2.50	-0.9388	5.00	-0.8840
3.12	-0.9400	6.25	-0.8364
3.75	-0.9177	7.50	-0.8197
4.38	-0.9318	8.75	-0.9060
5.00	-0.9305	10.00	-0.8231
6.25	-0.8846	15.00	-0.7819
7.50	-0.8240	17.50	-0.7850
8.75	-0.7805	20.00	-0.7237
10.00	-0.8160	30.00	-0.7199
12.50	-0.7900	50.00	-0.7003
15.00	-0.7836	60.00	-0.7003
20.00	-0.7821	70.00	-0.6703
20.00	-0.7668	80.00	-0.6969
30.00	-0.7573	90.00	-0.6794
40.00	-0.6796	100.00	-0.6745
50.00	-0.6871	110.00	-0.5265
60.00	-0.6832		
70.00	-0.6876		
80.00	-0.6803		
90.00	-0.6963		
100.00	-0.6778		
110.00	-0.4437		

Table 9. Continued

(k) Concluded

M = 0.892

mfr = 0.703 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.4928	-11.61	0.5051
-5.81	0.8192	-2.32	1.0846
-3.77	0.9608	0.00	0.8735
-2.32	1.0931	0.31	0.1073
-1.02	1.2085	0.63	-0.1791
-0.49	1.2103	1.25	-0.6039
0.00	0.8840	1.88	-0.6773
0.31	0.1102	2.50	-0.7064
0.63	-0.2147	3.12	-0.7738
1.25	-0.6043	3.75	-0.7346
1.88	-0.7062	4.38	-0.6931
2.50	-0.7659	5.00	-0.6827
3.12	-0.8013	6.25	-0.6633
3.75	-0.7732	7.50	-0.6138
4.38	-0.7634	8.75	-0.7136
5.00	-0.7389	10.00	-0.6059
6.25	-0.6682	15.00	-0.6094
7.50	-0.6511	17.50	-0.6221
8.75	-0.6606	20.00	-0.6269
10.00	-0.6536	30.00	-0.6197
12.50	-0.6514	50.00	-0.5905
15.00	-0.6500	60.00	-0.6118
20.00	-0.6318	70.00	-0.6159
20.00	-0.6167	80.00	-0.6193
30.00	-0.5967	90.00	-0.6462
40.00	-0.6048	100.00	-0.6331
50.00	-0.6263	110.00	-0.4120
60.00	-0.6142		
70.00	-0.6204		
80.00	-0.6235		
90.00	-0.6496		
100.00	-0.6181		
110.00	-0.2609		

M = 0.890

mfr = 0.761 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	**CP**	**X/L**	**CP**
-11.61	0.2608	-11.61	0.2526
-5.81	0.6412	-2.32	1.0080
-3.77	0.8282	0.00	0.9492
-2.32	1.0130	0.31	0.2746
-1.02	1.1824	0.63	-0.0105
-0.49	1.2144	1.25	-0.4196
0.00	0.9863	1.88	-0.4964
0.31	0.2629	2.50	-0.5034
0.63	-0.0287	3.12	-0.5241
1.25	-0.3669	3.75	-0.5737
1.88	-0.5004	4.38	-0.5047
2.50	-0.5712	5.00	-0.5075
3.12	-0.5963	6.25	-0.4770
3.75	-0.5479	7.50	-0.3135
4.38	-0.5992	8.75	-0.5176
5.00	-0.4719	10.00	-0.4354
6.25	-0.4532	15.00	-0.4906
7.50	-0.3884	17.50	-0.4910
8.75	-0.3734	20.00	-0.4886
10.00	-0.4170	30.00	-0.5540
12.50	-0.4783	50.00	-0.5712
15.00	-0.4763	60.00	-0.5578
20.00	-0.5071	70.00	-0.5654
20.00	-0.5051	80.00	-0.5850
30.00	-0.5559	90.00	-0.6112
40.00	-0.5370	100.00	-0.4523
50.00	-0.5338	110.00	-0.1356
60.00	-0.5727		
70.00	-0.5812		
80.00	-0.5835		
90.00	-0.6203		
100.00	-0.5986		
110.00	-0.1556		

Table 9. Continued

(l) M = 0.92

M = 0.914

mfr = 0.255 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.2189	-11.61	1.2168
-5.81	1.2188	-2.32	1.1048
-3.77	1.1820	0.00	-0.0341
-2.32	1.1047	0.31	-1.0014
-1.02	0.8751	0.63	-1.1858
-0.49	0.6932	1.25	-1.3809
0.00	-0.0646	1.88	-1.4092
0.31	-0.9901	2.50	-1.4411
0.63	-1.1918	3.12	-1.4375
1.25	-1.3726	3.75	-1.4491
1.88	-1.3973	4.38	-1.4354
2.50	-1.4453	5.00	-1.4307
3.12	-1.4566	6.25	-1.4141
3.75	-1.4518	7.50	-1.3943
4.38	-1.4521	8.75	-1.3778
5.00	-1.4387	10.00	-1.3688
6.25	-1.4238	15.00	-1.3160
7.50	-1.3958	17.50	-1.2929
8.75	-1.3895	20.00	-1.2630
10.00	-1.3669	30.00	-1.1901
12.50	-1.3559	50.00	-1.0284
15.00	-1.3049	60.00	-0.9819
20.00	-1.2967	70.00	-0.9639
20.00	-1.2538	80.00	-0.9320
30.00	-1.1954	90.00	-0.9280
40.00	-1.0898	100.00	-0.8922
50.00	-1.0202	110.00	-0.8447
60.00	-1.0004		
70.00	-0.9702		
80.00	-0.9345		
90.00	-0.9219		
100.00	-0.8956		
110.00	-0.8579		

M = 0.913

mfr = 0.255 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.2231	-11.61	1.2074
-5.81	1.2071	-2.32	1.1367
-3.77	1.1577	0.00	0.0588
-2.32	1.0702	0.31	-0.9259
-1.02	0.8219	0.63	-1.1089
-0.49	0.6107	1.25	-1.3225
0.00	-0.1771	1.88	-1.3546
0.31	-1.0723	2.50	-1.3815
0.63	-1.2646	3.12	-1.3854
1.25	-1.4196	3.75	-1.3845
1.88	-1.4453	4.38	-1.3752
2.50	-1.4951	5.00	-1.3711
3.12	-1.4975	6.25	-1.3462
3.75	-1.5010	7.50	-1.3178
4.38	-1.4990	8.75	-1.3095
5.00	-1.4879	10.00	-1.2927
6.25	-1.4715	15.00	-1.2243
7.50	-1.4578	17.50	-1.1935
8.75	-1.4476	20.00	-1.1768
10.00	-1.4411	30.00	-1.0917
12.50	-1.4259	50.00	-0.9437
15.00	-1.3962	60.00	-0.8894
20.00	-1.3782	70.00	-0.8600
20.00	-1.3546	80.00	-0.8469
30.00	-1.2700	90.00	-0.8526
40.00	-1.1960	100.00	-0.8170
50.00	-1.1388	110.00	-0.7587
60.00	-1.0880		
70.00	-1.0606		
80.00	-1.0282		
90.00	-1.0231		
100.00	-0.9807		
110.00	-0.9430		

M = 0.914

mfr = 0.306 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1998	-11.61	1.1985
-5.81	1.2264	-2.32	1.1475
-3.77	1.2079	0.00	0.0701
-2.32	1.1469	0.31	-0.9260
-1.02	0.9531	0.63	-1.1025
-0.49	0.7704	1.25	-1.3158
0.00	0.0442	1.88	-1.3542
0.31	-0.8978	2.50	-1.3897
0.63	-1.1173	3.12	-1.3884
1.25	-1.3221	3.75	-1.3900
1.88	-1.3465	4.38	-1.3846
2.50	-1.3986	5.00	-1.3726
3.12	-1.4093	6.25	-1.3615
3.75	-1.4072	7.50	-1.3382
4.38	-1.3986	8.75	-1.3322
5.00	-1.3867	10.00	-1.3081
6.25	-1.3641	15.00	-1.2521
7.50	-1.3507	17.50	-1.2236
8.75	-1.3292	20.00	-1.2019
10.00	-1.3081	30.00	-1.1330
12.50	-1.2857	50.00	-0.9870
15.00	-1.2494	60.00	-0.9643
20.00	-1.2339	70.00	-0.9220
20.00	-1.2019	80.00	-0.9053
30.00	-1.1236	90.00	-0.9076
40.00	-1.0462	100.00	-0.8815
50.00	-0.9827	110.00	-0.8273
60.00	-0.9698		
70.00	-0.9317		
80.00	-0.9069		
90.00	-0.8996		
100.00	-0.8629		
110.00	-0.8421		

M = 0.915

mfr = 0.384 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1451	-11.61	1.1447
-5.81	1.2197	-2.32	1.2040
-3.77	1.2264	0.00	0.2515
-2.32	1.2033	0.31	-0.7591
-1.02	1.0763	0.63	-0.9574
-0.49	0.9054	1.25	-1.1952
0.00	0.2473	1.88	-1.2515
0.31	-0.7381	2.50	-1.2811
0.63	-0.9706	3.12	-1.2794
1.25	-1.2081	3.75	-1.2902
1.88	-1.2471	4.38	-1.2832
2.50	-1.2939	5.00	-1.2661
3.12	-1.2865	6.25	-1.2469
3.75	-1.3019	7.50	-1.2260
4.38	-1.2918	8.75	-1.2138
5.00	-1.2817	10.00	-1.1972
6.25	-1.2513	15.00	-1.1490
7.50	-1.2221	17.50	-1.1336
8.75	-1.2191	20.00	-1.1039
10.00	-1.2057	30.00	-1.0266
12.50	-1.1712	50.00	-0.9026
15.00	-1.1432	60.00	-0.9059
20.00	-1.1206	70.00	-0.8784
20.00	-1.1052	80.00	-0.8533
30.00	-1.0466	90.00	-0.8637
40.00	-0.9654	100.00	-0.8313
50.00	-0.9182	110.00	-0.7798
60.00	-0.9008		
70.00	-0.8711		
80.00	-0.8558		
90.00	-0.8611		
100.00	-0.8150		
110.00	-0.7900		

M = 0.915

mfr = 0.441 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0885	-11.61	1.0852
-5.81	1.1932	-2.32	1.2205
-3.77	1.2230	0.00	0.3469
-2.32	1.2223	0.31	-0.6115
-1.02	1.1292	0.63	-0.8315
-0.49	0.9927	1.25	-1.0908
0.00	0.3613	1.88	-1.1705
0.31	-0.5845	2.50	-1.2093
0.63	-0.8806	3.12	-1.2057
1.25	-1.1233	3.75	-1.2103
1.88	-1.1820	4.38	-1.2047
2.50	-1.2242	5.00	-1.1855
3.12	-1.2085	6.25	-1.1583
3.75	-1.2153	7.50	-1.1269
4.38	-1.1981	8.75	-1.1342
5.00	-1.1945	10.00	-1.1155
6.25	-1.1707	15.00	-1.0794
7.50	-1.1501	17.50	-1.0480
8.75	-1.1415	20.00	-1.0299
10.00	-1.1320	30.00	-0.9643
12.50	-1.0962	50.00	-0.8662
15.00	-1.0619	60.00	-0.8498
20.00	-1.0522	70.00	-0.8221
20.00	-1.0319	80.00	-0.8110
30.00	-0.9619	90.00	-0.8194
40.00	-0.9059	100.00	-0.7986
50.00	-0.8621	110.00	-0.7582
60.00	-0.8507		
70.00	-0.8328		
80.00	-0.8113		
90.00	-0.8255		
100.00	-0.7788		
110.00	-0.7551		

M = 0.915

mfr = 0.467 and α = -1.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0376	-11.61	1.0813
-5.81	1.1671	-2.32	1.2236
-3.77	1.2136	0.00	0.3480
-2.32	1.2279	0.31	-0.5978
-1.02	1.1657	0.63	-0.8420
-0.49	1.0492	1.25	-1.0914
0.00	0.4755	1.88	-1.1664
0.31	-0.4472	2.50	-1.2112
0.63	-0.7680	3.12	-1.2243
1.25	-1.0374	3.75	-1.2182
1.88	-1.0961	4.38	-1.2012
2.50	-1.1444	5.00	-1.1857
3.12	-1.1274	6.25	-1.1828
3.75	-1.1286	7.50	-1.1402
4.38	-1.1048	8.75	-1.1587
5.00	-1.1012	10.00	-1.1309
6.25	-1.0806	15.00	-1.0884
7.50	-1.0734	17.50	-1.0446
8.75	-1.0413	20.00	-1.0369
10.00	-1.0211	30.00	-0.9863
12.50	-1.0261	50.00	-0.8890
15.00	-0.9772	60.00	-0.8719
20.00	-0.9678	70.00	-0.8485
20.00	-0.9192	80.00	-0.8368
30.00	-0.8811	90.00	-0.8388
40.00	-0.8071	100.00	-0.8217
50.00	-0.7900	110.00	-0.7942
60.00	-0.7757		
70.00	-0.7481		
80.00	-0.7541		
90.00	-0.7578		
100.00	-0.7227		
110.00	-0.6887		

M = 0.916

mfr = 0.468 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0540	-11.61	1.0570
-5.81	1.1754	-2.32	1.2276
-3.77	1.2201	0.00	0.3971
-2.32	1.2257	0.31	-0.5729
-1.02	1.1520	0.63	-0.7954
-0.49	1.0282	1.25	-1.0546
0.00	0.4252	1.88	-1.1429
0.31	-0.5208	2.50	-1.1719
0.63	-0.8307	3.12	-1.1712
1.25	-1.0644	3.75	-1.1769
1.88	-1.1439	4.38	-1.1590
2.50	-1.1772	5.00	-1.1291
3.12	-1.1677	6.25	-1.1205
3.75	-1.1597	7.50	-1.0984
4.38	-1.1665	8.75	-1.0951
5.00	-1.1516	10.00	-1.0817
6.25	-1.1400	15.00	-1.0422
7.50	-1.1073	17.50	-1.0014
8.75	-1.0706	20.00	-0.9840
10.00	-1.0807	30.00	-0.9034
12.50	-1.0733	50.00	-0.8456
15.00	-1.0313	60.00	-0.8127
20.00	-1.0090	70.00	-0.8077
20.00	-0.9727	80.00	-0.8107
30.00	-0.9153	90.00	-0.8087
40.00	-0.8561	100.00	-0.7723
50.00	-0.8450	110.00	-0.7395
60.00	-0.8383		
70.00	-0.7987		
80.00	-0.7975		
90.00	-0.7989		
100.00	-0.7675		
110.00	-0.7376		

M = 0.916

mfr = 0.463 and α = 1.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0770	-11.61	1.0389
-5.81	1.1931	-2.32	1.2272
-3.77	1.2246	0.00	0.4430
-2.32	1.2256	0.31	-0.4831
-1.02	1.1240	0.63	-0.7335
-0.49	1.0103	1.25	-1.0064
0.00	0.3639	1.88	-1.0843
0.31	-0.6033	2.50	-1.1301
0.63	-0.8675	3.12	-1.1286
1.25	-1.1213	3.75	-1.1324
1.88	-1.1737	4.38	-1.1122
2.50	-1.2263	5.00	-1.0846
3.12	-1.2308	6.25	-1.0672
3.75	-1.2159	7.50	-1.0429
4.38	-1.2094	8.75	-1.0470
5.00	-1.1930	10.00	-1.0191
6.25	-1.1731	15.00	-0.9789
7.50	-1.1567	17.50	-0.9432
8.75	-1.1529	20.00	-0.9191
10.00	-1.1219	30.00	-0.8536
12.50	-1.1023	50.00	-0.7907
15.00	-1.0728	60.00	-0.7696
20.00	-1.0713	70.00	-0.7543
20.00	-1.0456	80.00	-0.7362
30.00	-0.9925	90.00	-0.7499
40.00	-0.9068	100.00	-0.7315
50.00	-0.8794	110.00	-0.6868
60.00	-0.8723		
70.00	-0.8513		
80.00	-0.8315		
90.00	-0.8389		
100.00	-0.8119		
110.00	-0.7794		

Table 9. Continued

(l) Continued

M = 0.914

mfr = 0.468 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.0938	-11.61	1.0156
-5.81	1.1961	-2.32	1.2280
-3.77	1.2255	0.00	0.5053
-2.32	1.2168	0.31	-0.4167
-1.02	1.1082	0.63	-0.6735
-0.49	0.9655	1.25	-0.9432
0.00	0.3068	1.88	-1.0586
0.31	-0.6319	2.50	-1.0901
0.63	-0.9353	3.12	-1.1064
1.25	-1.1554	3.75	-1.0814
1.88	-1.2237	4.38	-1.0697
2.50	-1.2595	5.00	-1.0387
3.12	-1.2613	6.25	-1.0219
3.75	-1.2643	7.50	-0.9915
4.38	-1.2643	8.75	-1.0065
5.00	-1.2476	10.00	-0.9754
6.25	-1.2276	15.00	-0.9205
7.50	-1.2067	17.50	-0.8950
8.75	-1.1841	20.00	-0.8752
10.00	-1.1963	30.00	-0.8229
12.50	-1.1653	50.00	-0.7260
15.00	-1.1362	60.00	-0.7173
20.00	-1.1304	70.00	-0.7110
20.00	-1.0928	80.00	-0.7053
30.00	-1.0358	90.00	-0.7284
40.00	-0.9642	100.00	-0.6838
50.00	-0.9469	110.00	-0.6604
60.00	-0.9253		
70.00	-0.9077		
80.00	-0.8959		
90.00	-0.8768		
100.00	-0.8599		
110.00	-0.8329		

M = 0.915

mfr = 0.470 and α = 3.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	1.1064	-11.61	0.9947
-5.81	1.2074	-2.32	1.2271
-3.77	1.2252	0.00	0.5582
-2.32	1.2133	0.31	-0.3320
-1.02	1.0863	0.63	-0.5843
-0.49	0.9401	1.25	-0.8810
0.00	0.2650	1.88	-0.9874
0.31	-0.7218	2.50	-1.0225
0.63	-0.9596	3.12	-1.0272
1.25	-1.1937	3.75	-1.0272
1.88	-1.2487	4.38	-1.0080
2.50	-1.2943	5.00	-0.9774
3.12	-1.3018	6.25	-0.9717
3.75	-1.3039	7.50	-0.9205
4.38	-1.2931	8.75	-0.9501
5.00	-1.2896	10.00	-0.9081
6.25	-1.2621	15.00	-0.8458
7.50	-1.2457	17.50	-0.8124
8.75	-1.2282	20.00	-0.7933
10.00	-1.2359	30.00	-0.7432
12.50	-1.2041	50.00	-0.6489
15.00	-1.1754	60.00	-0.6468
20.00	-1.1687	70.00	-0.6412
20.00	-1.1371	80.00	-0.6438
30.00	-1.0931	90.00	-0.6652
40.00	-1.0317	100.00	-0.6385
50.00	-0.9968	110.00	-0.5872
60.00	-0.9619		
70.00	-0.9533		
80.00	-0.9245		
90.00	-0.9218		
100.00	-0.9004		
110.00	-0.8751		

M = 0.917

mfr = 0.522 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.9851	-11.61	0.9861
-5.81	1.1371	-2.32	1.2280
-3.77	1.1971	0.00	0.5101
-2.32	1.2261	0.31	-0.4068
-1.02	1.1908	0.63	-0.6750
-0.49	1.0944	1.25	-0.9400
0.00	0.5221	1.88	-1.0177
0.31	-0.3615	2.50	-1.0805
0.63	-0.7005	3.12	-1.0949
1.25	-0.9914	3.75	-1.0692
1.88	-1.0322	4.38	-1.0605
2.50	-1.0729	5.00	-1.0418
3.12	-1.0818	6.25	-1.0173
3.75	-1.0738	7.50	-1.0024
4.38	-1.0812	8.75	-1.0138
5.00	-1.0622	10.00	-0.9761
6.25	-1.0358	15.00	-0.9657
7.50	-1.0229	17.50	-0.9143
8.75	-1.0039	20.00	-0.9080
10.00	-0.9953	30.00	-0.8582
12.50	-0.9843	50.00	-0.7908
15.00	-0.9320	60.00	-0.7684
20.00	-0.9091	70.00	-0.7744
20.00	-0.9135	80.00	-0.7544
30.00	-0.8592	90.00	-0.7537
40.00	-0.7902	100.00	-0.7370
50.00	-0.7709	110.00	-0.7063
60.00	-0.7721		
70.00	-0.7731		
80.00	-0.7651		
90.00	-0.7528		
100.00	-0.7348		
110.00	-0.7186		

M = 0.916

mfr = 0.583 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.8659	-11.61	0.8532
-5.81	1.0557	-2.32	1.2140
-3.77	1.1389	0.00	0.6481
-2.32	1.2120	0.31	-0.2002
-1.02	1.2179	0.63	-0.4908
-0.49	1.1564	1.25	-0.7990
0.00	0.6591	1.88	-0.9065
0.31	-0.2264	2.50	-0.9672
0.63	-0.5216	3.12	-0.9672
1.25	-0.8237	3.75	-0.9689
1.88	-0.9126	4.38	-0.9738
2.50	-0.9677	5.00	-0.9404
3.12	-1.0025	6.25	-0.9208
3.75	-0.9742	7.50	-0.8835
4.38	-0.9849	8.75	-0.9138
5.00	-0.9477	10.00	-0.8876
6.25	-0.9102	15.00	-0.8097
7.50	-0.8870	17.50	-0.8220
8.75	-0.8802	20.00	-0.7816
10.00	-0.8763	30.00	-0.7876
12.50	-0.8939	50.00	-0.7258
15.00	-0.8691	60.00	-0.6880
20.00	-0.8278	70.00	-0.7137
20.00	-0.7998	80.00	-0.7071
30.00	-0.7886	90.00	-0.7234
40.00	-0.7203	100.00	-0.6940
50.00	-0.7332	110.00	-0.6395
60.00	-0.7084		
70.00	-0.7107		
80.00	-0.7056		
90.00	-0.7115		
100.00	-0.6941		
110.00	-0.6648		

M = 0.918

mfr = 0.643 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7183	-11.61	0.7116
-5.81	0.9640	-2.32	1.1759
-3.77	1.0894	0.00	0.7842
-2.32	1.1718	0.31	-0.0442
-1.02	1.2277	0.63	-0.3298
-0.49	1.1973	1.25	-0.6645
0.00	0.7810	1.88	-0.7894
0.31	-0.0243	2.50	-0.8619
0.63	-0.3804	3.12	-0.8468
1.25	-0.6857	3.75	-0.8438
1.88	-0.8008	4.38	-0.8336
2.50	-0.8234	5.00	-0.8231
3.12	-0.8457	6.25	-0.7935
3.75	-0.8495	7.50	-0.7711
4.38	-0.8448	8.75	-0.8343
5.00	-0.8469	10.00	-0.7503
6.25	-0.8216	15.00	-0.7143
7.50	-0.7719	17.50	-0.6973
8.75	-0.7636	20.00	-0.6662
10.00	-0.7484	30.00	-0.6649
12.50	-0.7273	50.00	-0.6338
15.00	-0.7361	60.00	-0.6615
20.00	-0.7235	70.00	-0.6579
20.00	-0.7005	80.00	-0.6408
30.00	-0.7056	90.00	-0.6672
40.00	-0.6151	100.00	-0.6422
50.00	-0.6498	110.00	-0.6104
60.00	-0.6323		
70.00	-0.6535		
80.00	-0.6445		
90.00	-0.6593		
100.00	-0.6389		
110.00	-0.6257		

M = 0.916

mfr = 0.641 and α = 2.1°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.7851	-11.61	0.6339
-5.81	1.0145	-2.32	1.1340
-3.77	1.1160	0.00	0.8738
-2.32	1.2014	0.31	0.1088
-1.02	1.2217	0.63	-0.1517
-0.49	1.1766	1.25	-0.5775
0.00	0.6893	1.88	-0.6638
0.31	-0.1706	2.50	-0.6536
0.63	-0.5193	3.12	-0.7019
1.25	-0.7989	3.75	-0.6733
1.88	-0.9153	4.38	-0.6380
2.50	-0.9710	5.00	-0.6080
3.12	-0.9937	6.25	-0.5844
3.75	-1.0035	7.50	-0.5283
4.38	-0.9940	8.75	-0.6652
5.00	-0.9788	10.00	-0.5547
6.25	-0.9246	15.00	-0.5725
7.50	-0.9106	17.50	-0.4908
8.75	-0.9001	20.00	-0.4818
10.00	-0.9180	30.00	-0.5069
12.50	-0.8814	50.00	-0.5079
15.00	-0.8499	60.00	-0.5310
20.00	-0.8796	70.00	-0.5437
20.00	-0.8468	80.00	-0.5631
30.00	-0.8245	90.00	-0.6006
40.00	-0.7940	100.00	-0.5852
50.00	-0.7592	110.00	-0.5370
60.00	-0.7752		
70.00	-0.7540		
80.00	-0.7616		
90.00	-0.7761		
100.00	-0.7455		
110.00	-0.7017		

M = 0.918

mfr = 0.704 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.5331	-11.61	0.5208
-5.81	0.8158	-2.32	1.1158
-3.77	0.9775	0.00	0.8850
-2.32	1.0968	0.31	0.1547
-1.02	1.2198	0.63	-0.1397
-0.49	1.2243	1.25	-0.5106
0.00	0.8957	1.88	-0.6462
0.31	0.1538	2.50	-0.6486
0.63	-0.1532	3.12	-0.7079
1.25	-0.5178	3.75	-0.6596
1.88	-0.6344	4.38	-0.6218
2.50	-0.6721	5.00	-0.6309
3.12	-0.7030	6.25	-0.5901
3.75	-0.6647	7.50	-0.5764
4.38	-0.6593	8.75	-0.7159
5.00	-0.7027	10.00	-0.6088
6.25	-0.5883	15.00	-0.5800
7.50	-0.6118	17.50	-0.5296
8.75	-0.5503	20.00	-0.5627
10.00	-0.6115	30.00	-0.5600
12.50	-0.6091	50.00	-0.5757
15.00	-0.5720	60.00	-0.5797
20.00	-0.5666	70.00	-0.5864
20.00	-0.5162	80.00	-0.6007
30.00	-0.5720	90.00	-0.6245
40.00	-0.5465	100.00	-0.6185
50.00	-0.5723	110.00	-0.5673
60.00	-0.5796		
70.00	-0.6031		
80.00	-0.5998		
90.00	-0.6136		
100.00	-0.6061		
110.00	-0.5892		

M = 0.915

mfr = 0.761 and α = 0.0°

ϕ = 0°		ϕ = 180°	
X/L	CP	X/L	CP
-11.61	0.2942	-11.61	0.2655
-5.81	0.6416	-2.32	1.0042
-3.77	0.8339	0.00	0.9918
-2.32	1.0142	0.31	0.3039
-1.02	1.1918	0.63	0.0378
-0.49	1.2268	1.25	-0.3238
0.00	0.9960	1.88	-0.4615
0.31	0.3126	2.50	-0.4622
0.63	0.0173	3.12	-0.4916
1.25	-0.2817	3.75	-0.4478
1.88	-0.4362	4.38	-0.4465
2.50	-0.4729	5.00	-0.4287
3.12	-0.5343	6.25	-0.2686
3.75	-0.5480	7.50	-0.3110
4.38	-0.4872	8.75	-0.4423
5.00	-0.5107	10.00	-0.3787
6.25	-0.3575	15.00	-0.4360
7.50	-0.3781	17.50	-0.4364
8.75	-0.3101	20.00	-0.4608
10.00	-0.3513	30.00	-0.4893
12.50	-0.4144	50.00	-0.5134
15.00	-0.4241	60.00	-0.5399
20.00	-0.4603	70.00	-0.5519
20.00	-0.4615	80.00	-0.5770
30.00	-0.5045	90.00	-0.6028
40.00	-0.4983	100.00	-0.5871
50.00	-0.5027	110.00	-0.5492
60.00	-0.5440		
70.00	-0.5733		
80.00	-0.5825		
90.00	-0.5987		
100.00	-0.5818		
110.00	-0.5659		

Table 9. Concluded

(l) Concluded

M = 0.916

mfr = 0.763 and α = 2.1°

ϕ = 0°		**ϕ = 180°**	
X/L	**CP**	**X/L**	**CP**
-11.61	0.3757	-11.61	0.1462
-5.81	0.7448	-2.32	0.9443
-3.77	0.9332	0.00	1.0768
-2.32	1.0841	0.31	0.4675
-1.02	1.2140	0.63	0.2795
-0.49	1.2255	1.25	-0.0883
0.00	0.9368	1.88	-0.1191
0.31	0.1726	2.50	-0.1918
0.63	-0.1484	3.12	-0.2312
1.25	-0.5574	3.75	-0.1529
1.88	-0.6012	4.38	-0.1408
2.50	-0.7016	5.00	-0.1168
3.12	-0.7049	6.25	-0.1548
3.75	-0.7174	7.50	-0.1399
4.38	-0.7108	8.75	-0.3913
5.00	-0.6658	10.00	-0.3124
6.25	-0.6262	15.00	-0.2578
7.50	-0.6265	17.50	-0.2819
8.75	-0.5952	20.00	-0.2983
10.00	-0.6360	30.00	-0.3991
12.50	-0.6310	50.00	-0.4142
15.00	-0.6459	60.00	-0.4457
20.00	-0.6161	70.00	-0.4470
20.00	-0.6093	80.00	-0.4832
30.00	-0.6360	90.00	-0.5130
40.00	-0.6023	100.00	-0.5160
50.00	-0.6411	110.00	-0.4858
60.00	-0.6431		
70.00	-0.6556		
80.00	-0.6470		
90.00	-0.6548		
100.00	-0.6435		
110.00	-0.6152		

Cowl	Forebody length, in.	L, in.	r_h, in.	Designation in ref. 13	Designation in ref. 12	Designation in ref. 11
A	31.79	7.897	7.682	Gelac #1		
B	29.00	↓	↓	GE #1		
C	27.50			Calac #4	Medium	
D	27.50			Calac #2		NACA 1-85-43.9
E	28.31	7.200	7.920	GE #2		
F	25.80	7.200	7.920	Calac#6		

(All 6 cowls have a contraction ratio of 1.250)

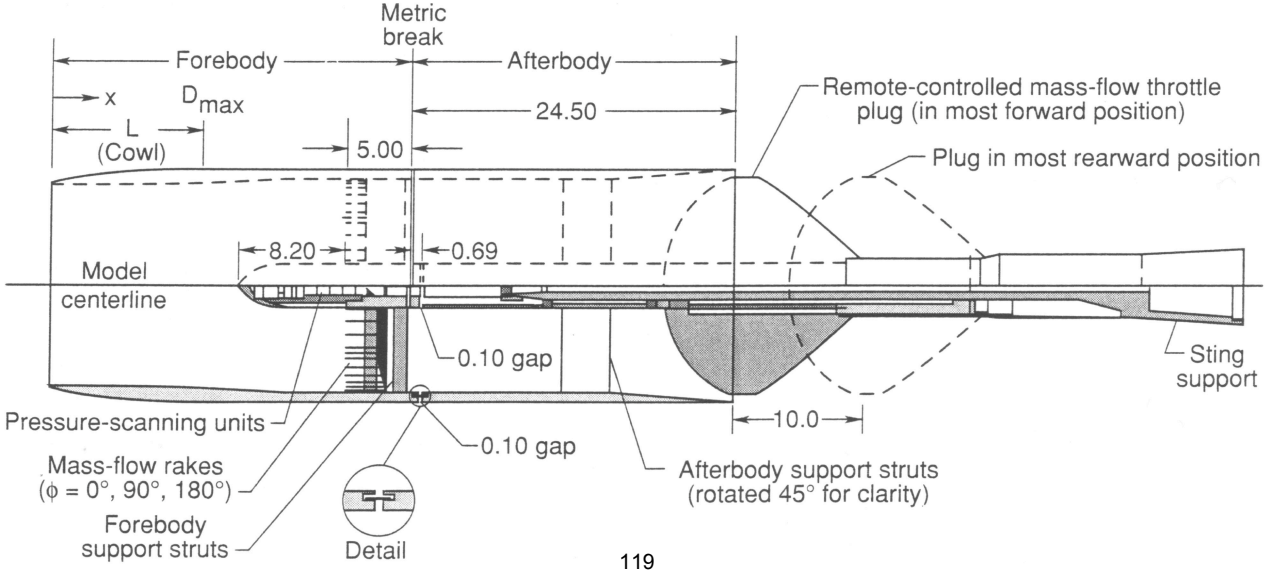

Figure 1. Simplified cross-sectional sketch of complete model. Linear dimensions are in inches.

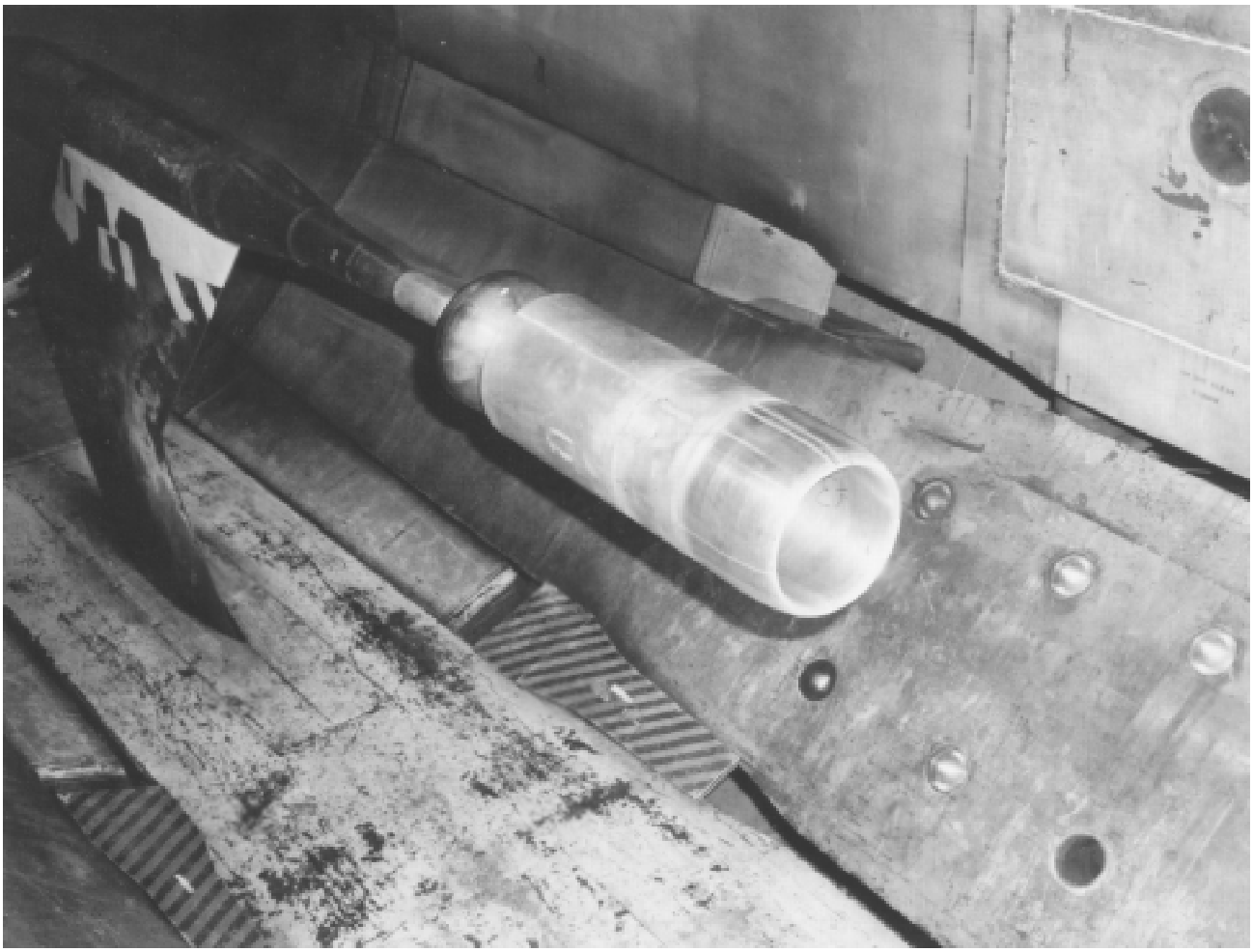

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Figure 2. Complete model installed in 16-Foot Transonic Tunnel test section.

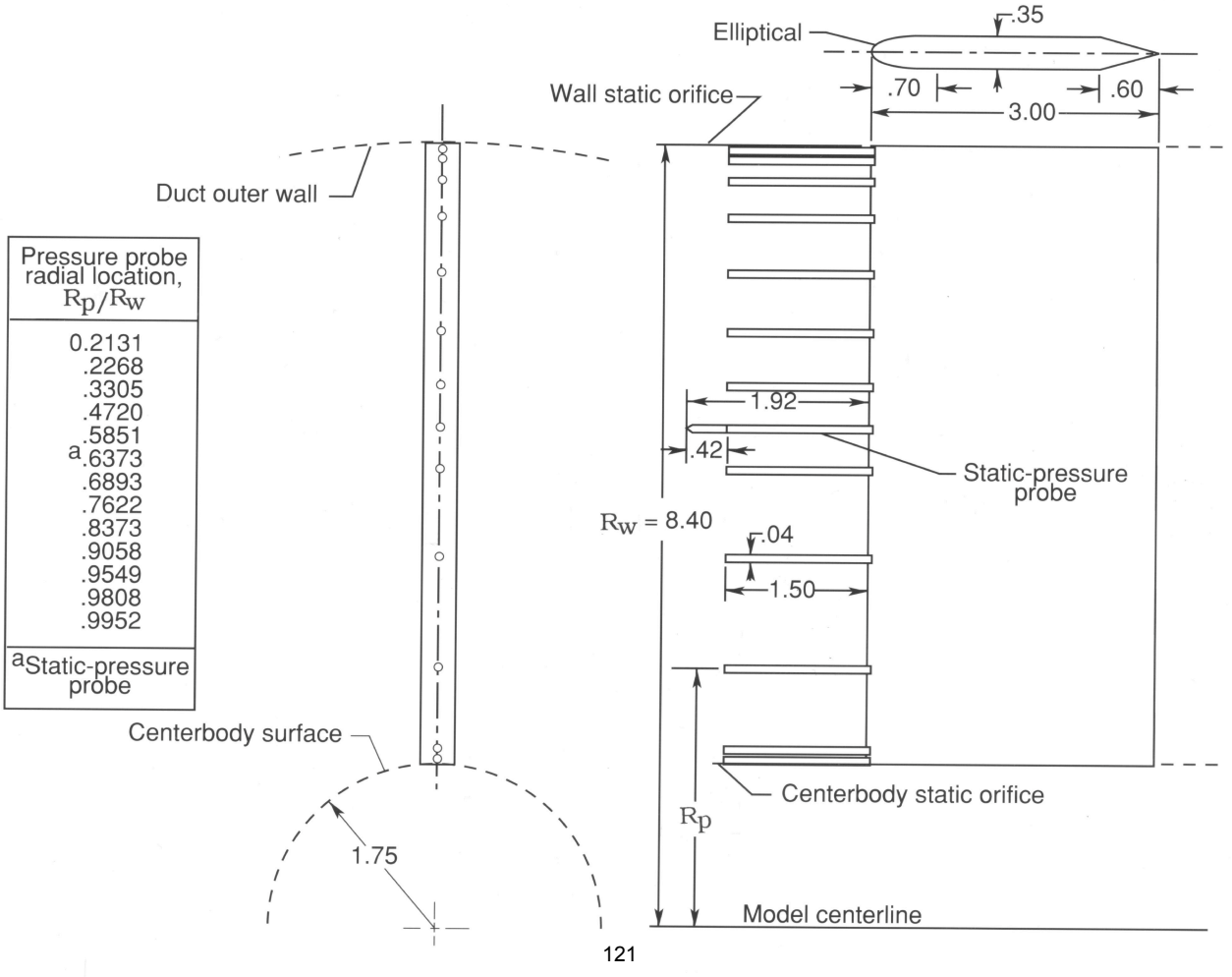
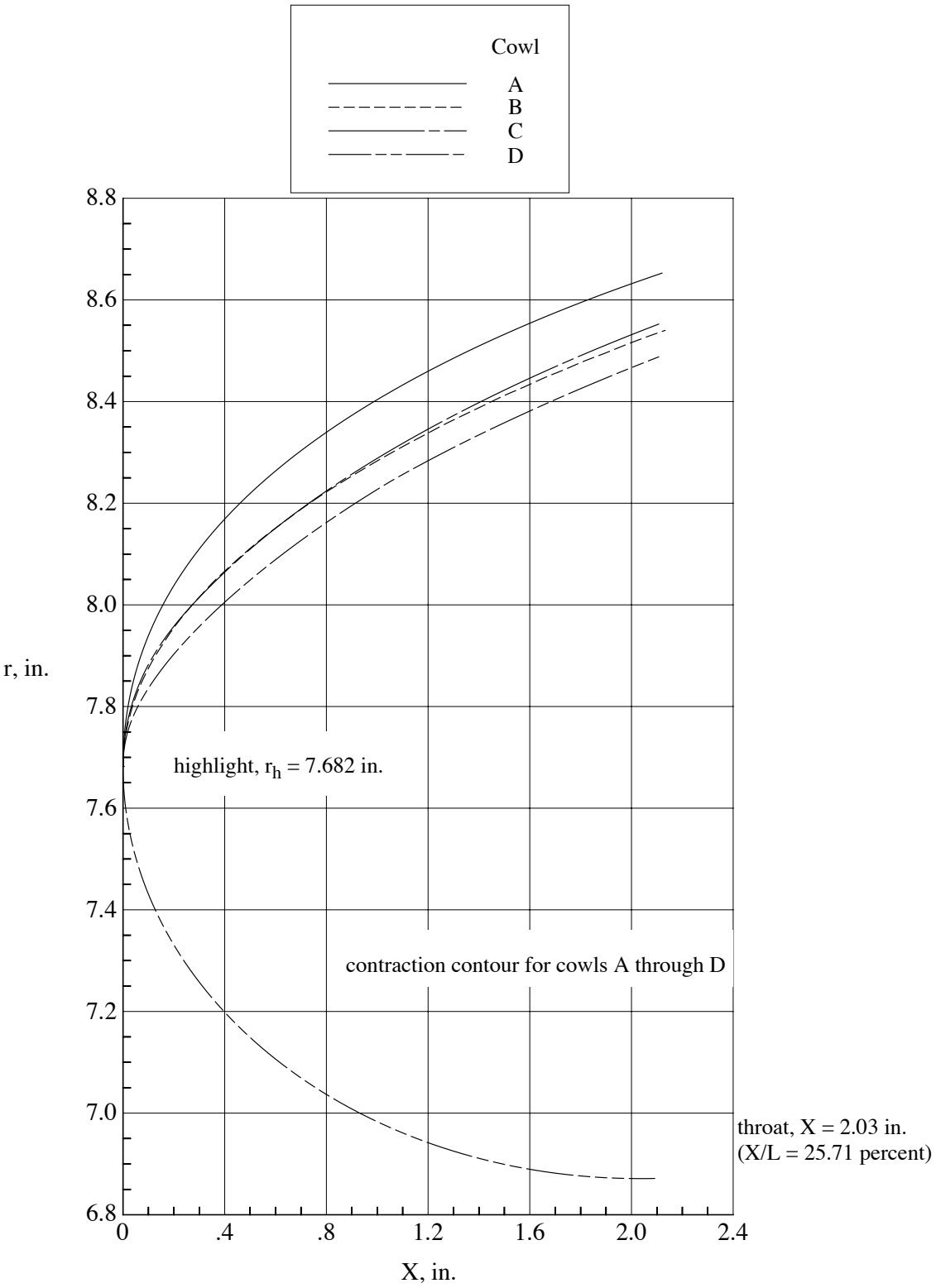
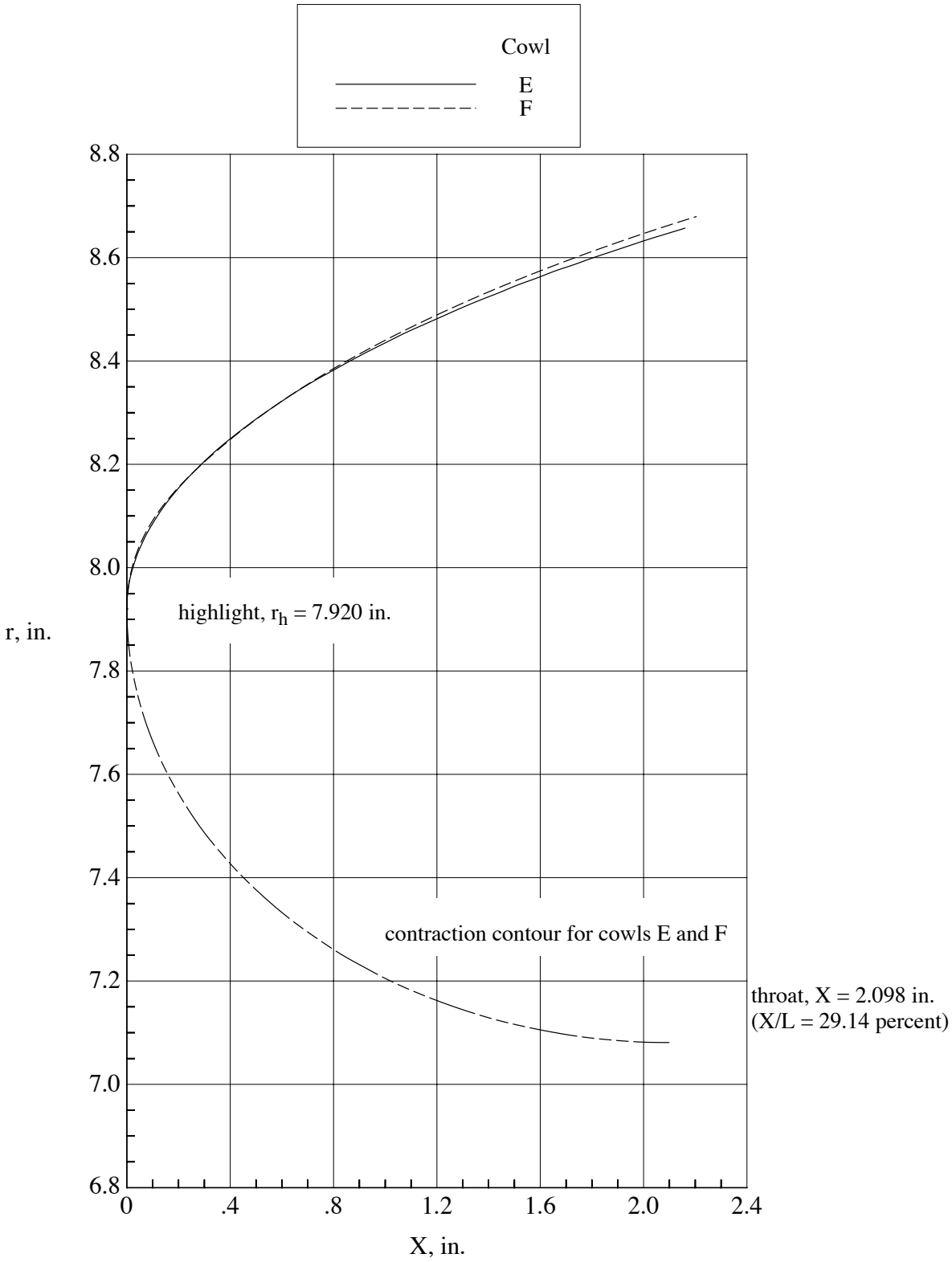


Figure 3. Pressure instrumentation (on struts at $\phi = 0°$, $90°$, and $180°$) used to obtain data for mass-flow computations. Linear dimensions are in inches.



(a) Cowls A through D.

Figure 4.- Geometry of forward portion of the six cowls showing the dimensional differences in external contour. (Note that the radius ordinate scale is twice that of the X ordinate scale.)



(b) Cowls E and F.

Figure 4.-Concluded.

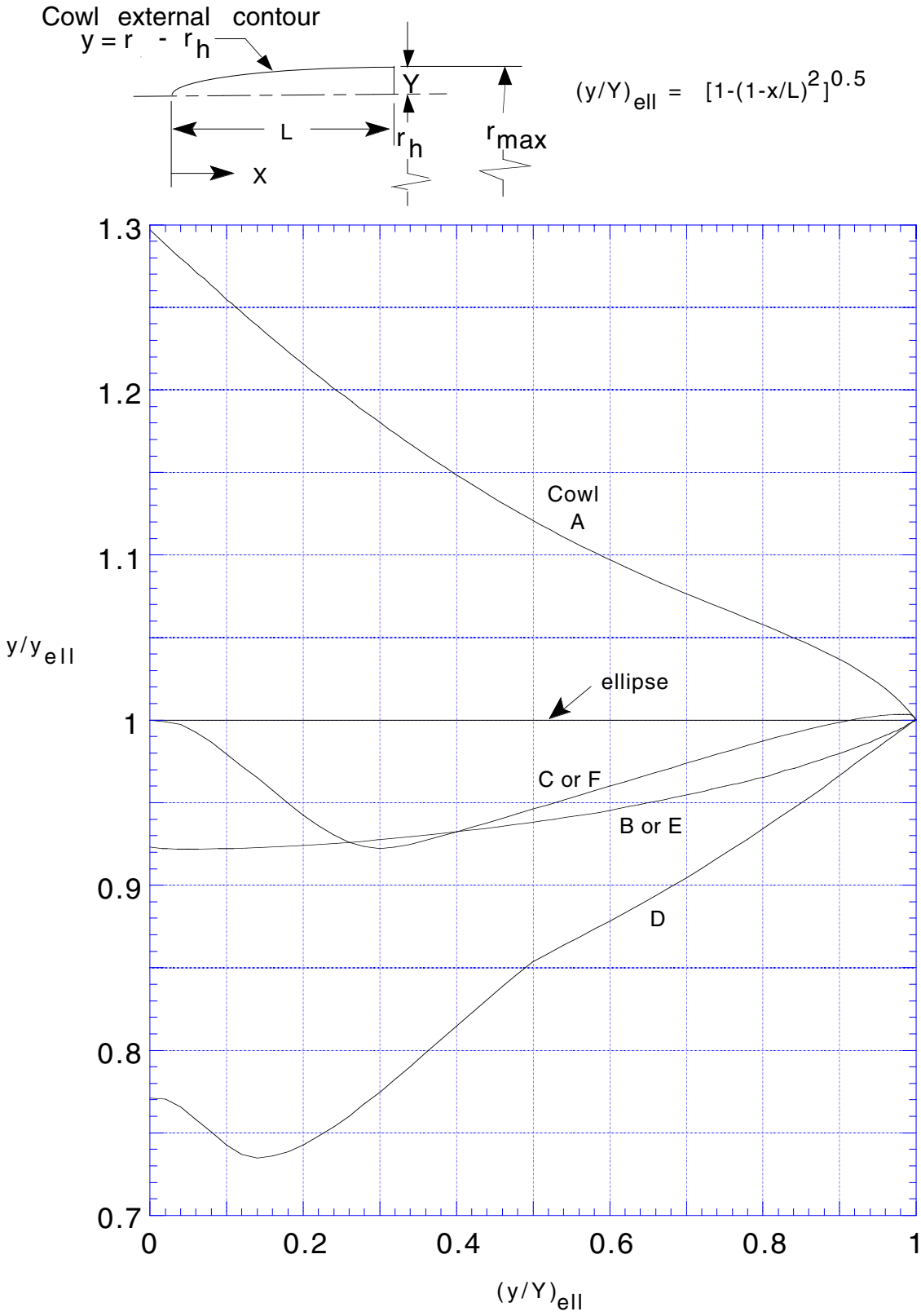


Figure 5. Variation of the ratio of local cowl thickness to an elliptical cowl local thickness with the local thickness ratio of the elliptical shape.

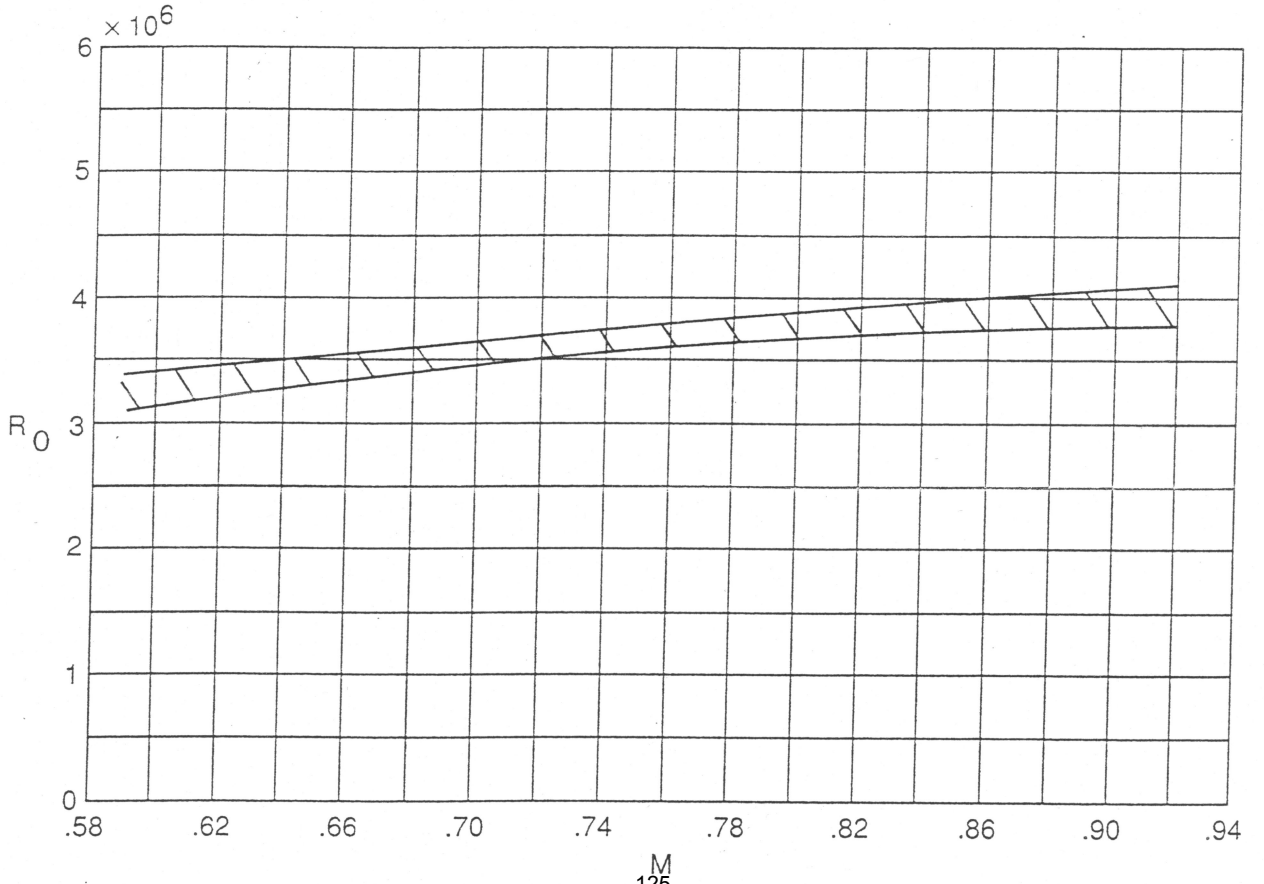
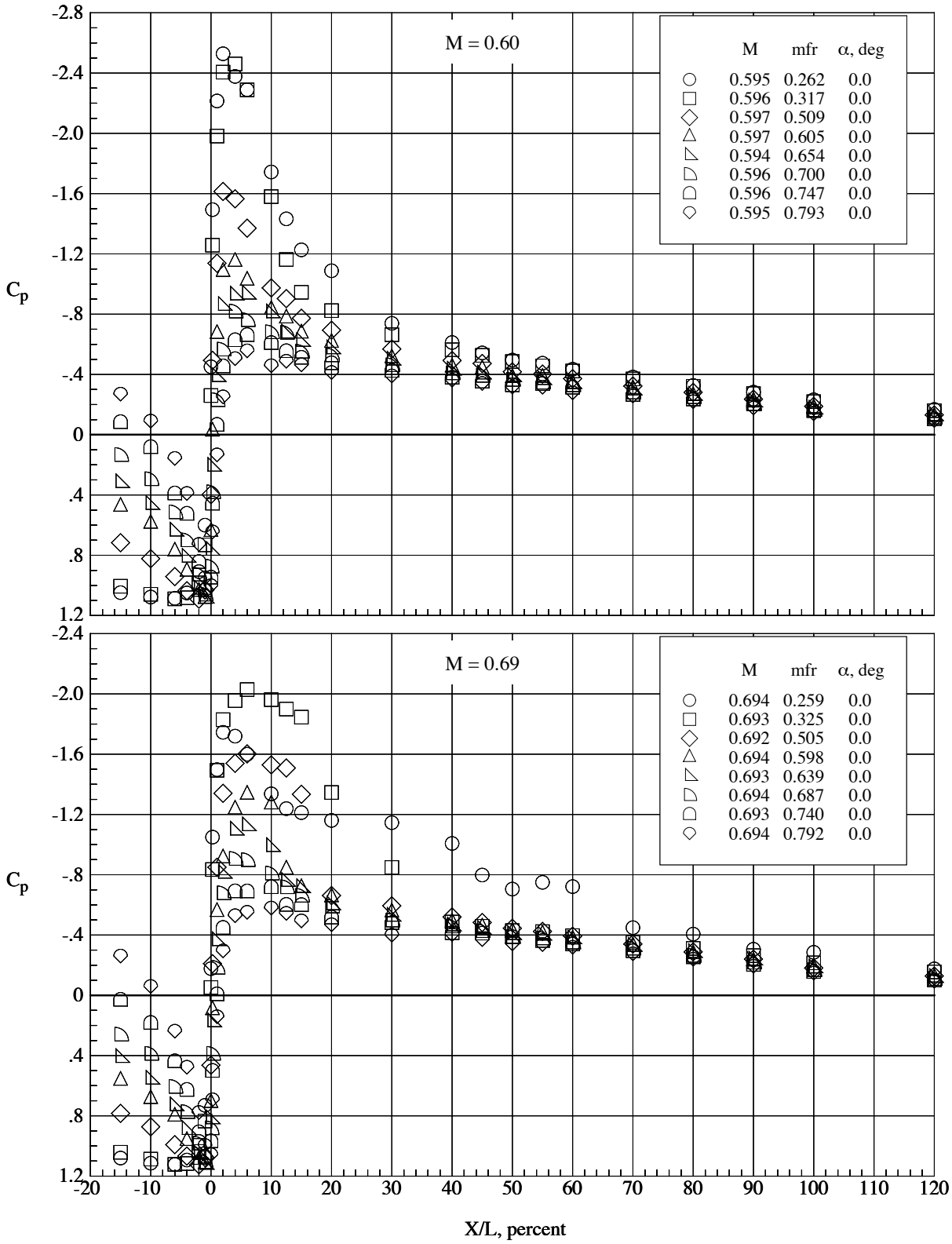
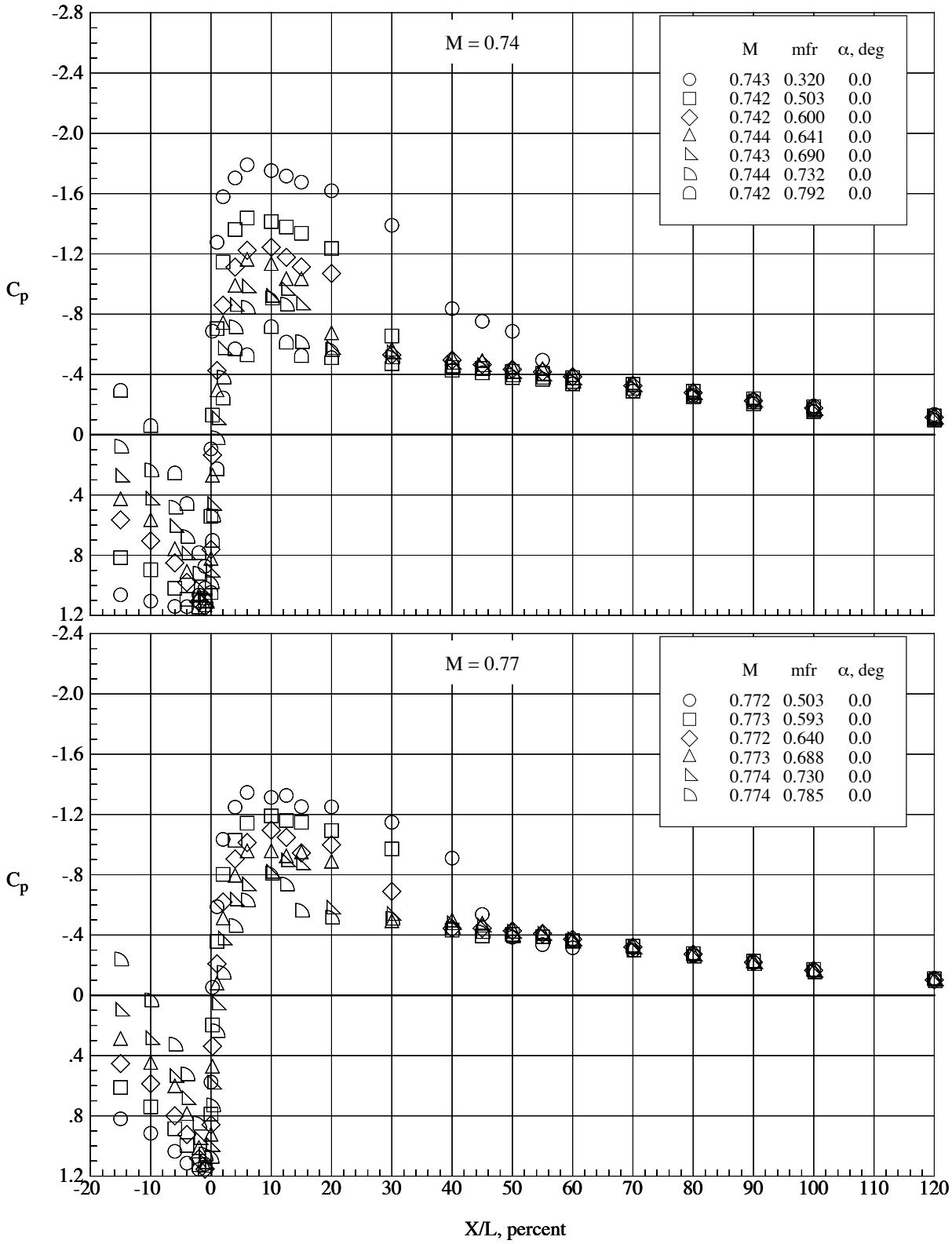


Figure 6. Variation of test Reynolds number with free-stream Mach number.



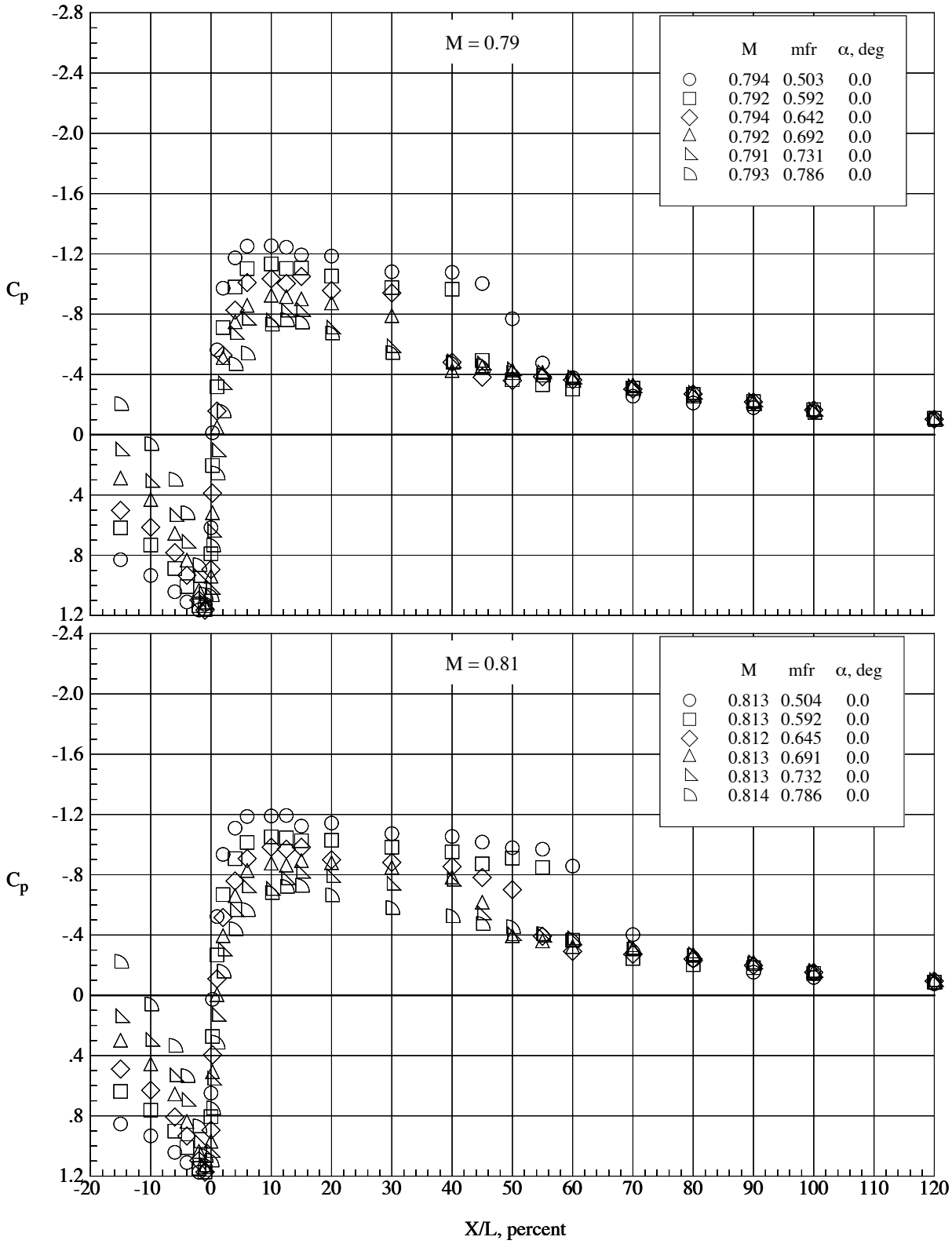
(a) M = 0.60 and 0.69.

Figure 7.- Pressure coefficient variation with X/L for Cowl A for several mass-flow ratios at $\alpha = 0°$.



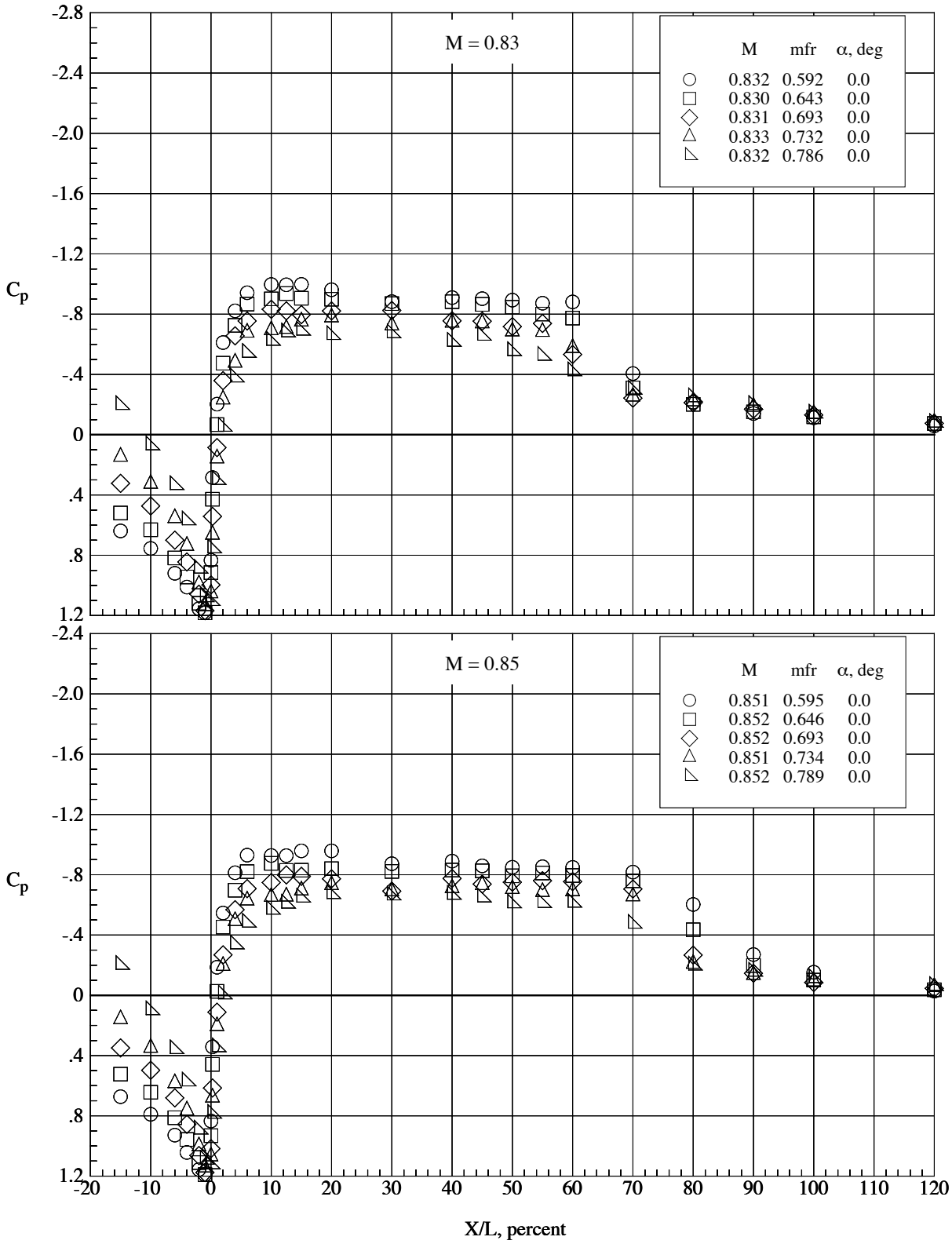
(b) M = 0.74 and 0.77.

Figure 7.- Continued.



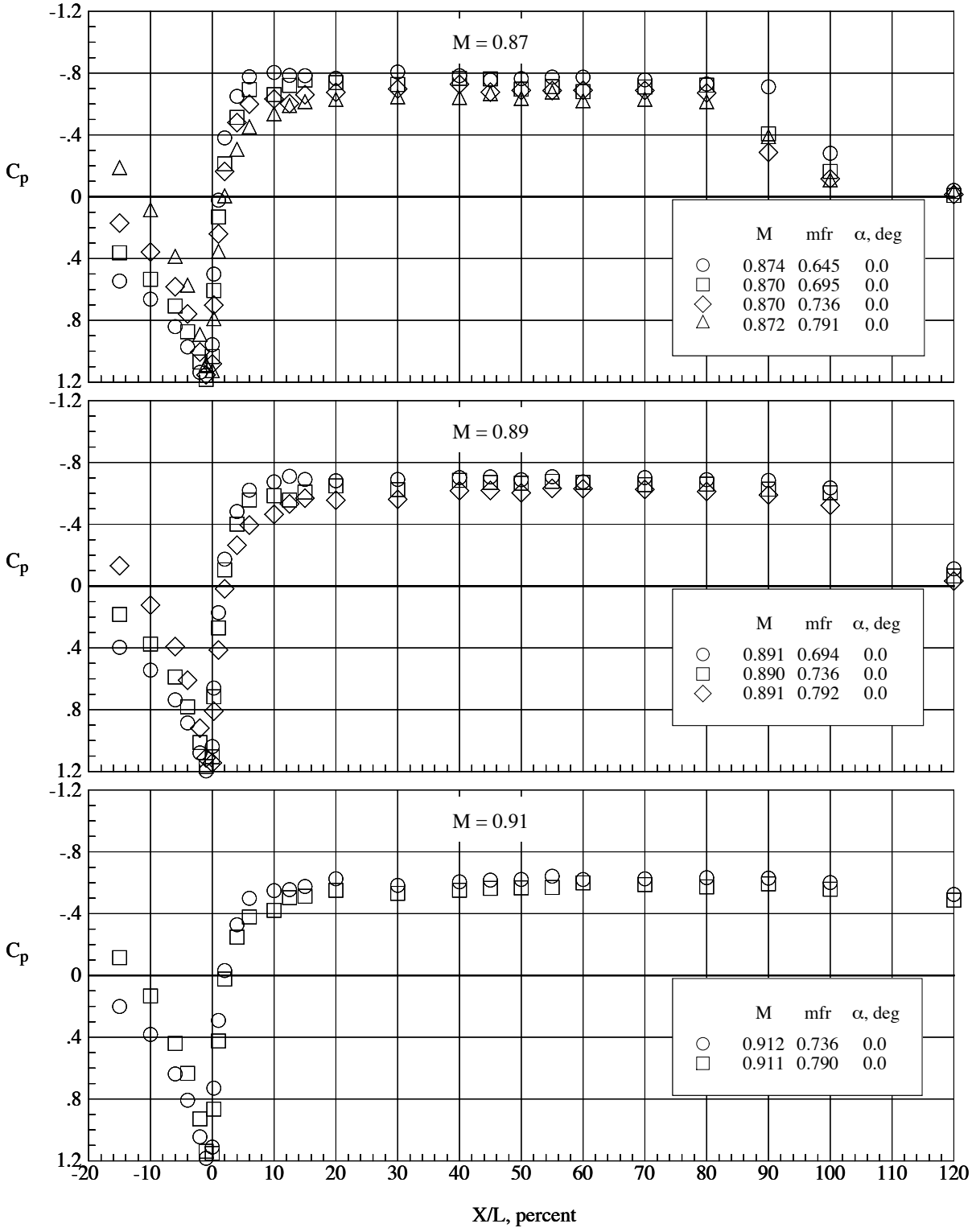
(c) M = 0.79 and 0.81.

Figure 7.- Continued.



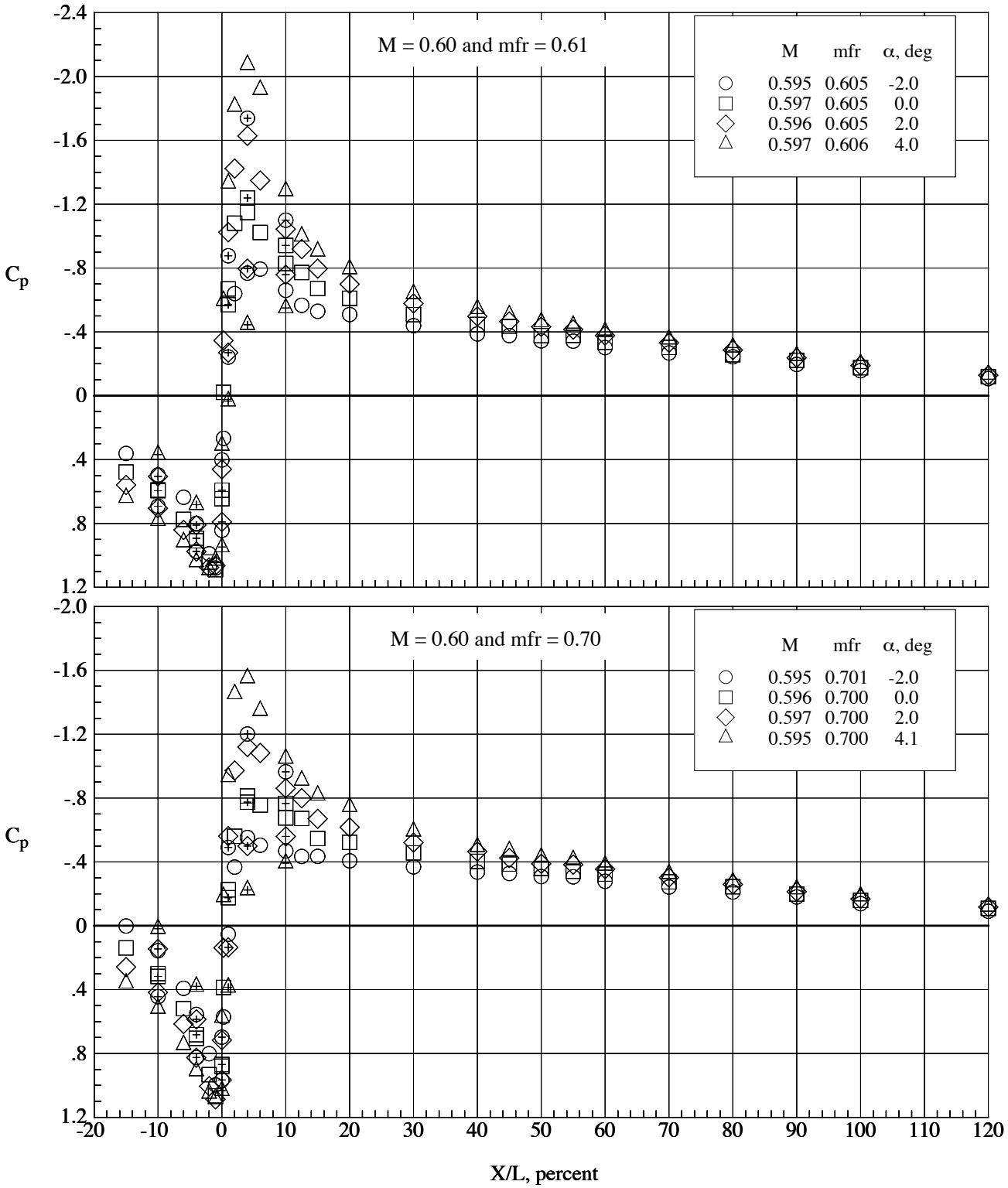
(d) M = 0.83 and 0.85.

Figure 7.- Continued.



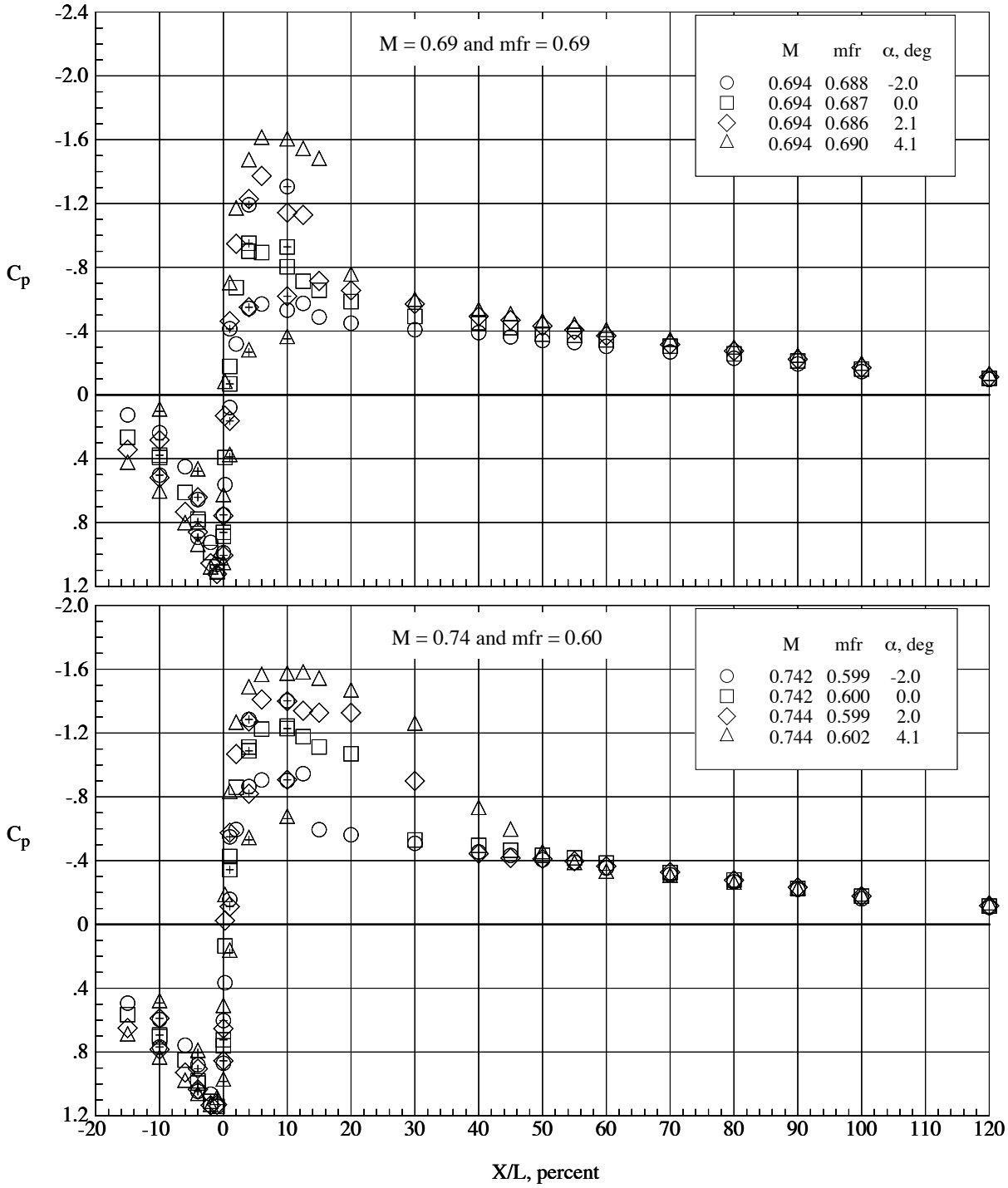
(e) M = 0.87, 89, and 0.91.

Figure 7.- Concluded.



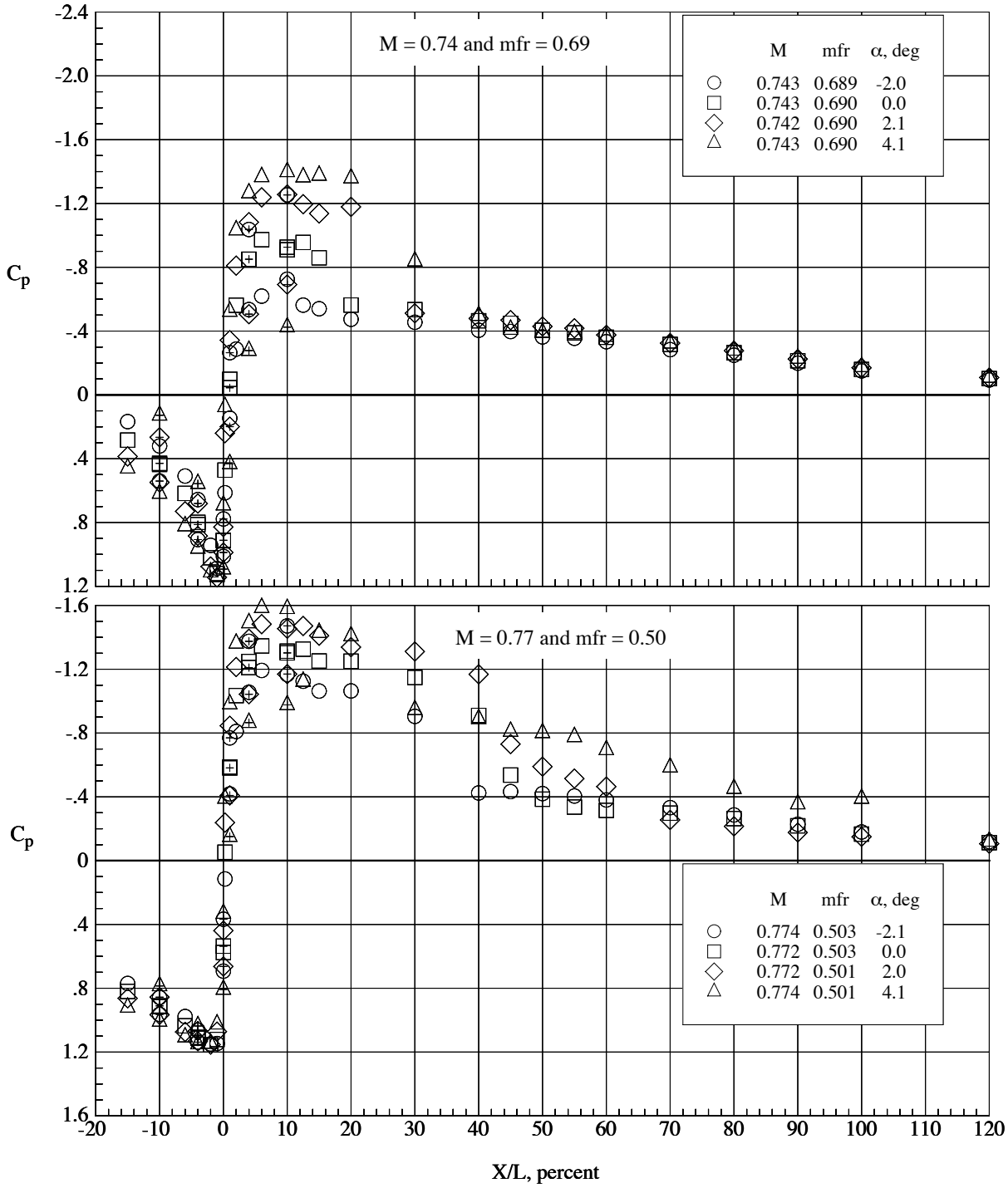
(a) M = 0.60.

Figure 8.- Pressure coefficient variation with X/L along the $\phi = 0°$ (plain symbols) and 180° (symbols with plus signs) meridians for Cowl A at various Mach numbers and mass-flow ratios at several angles of attack.



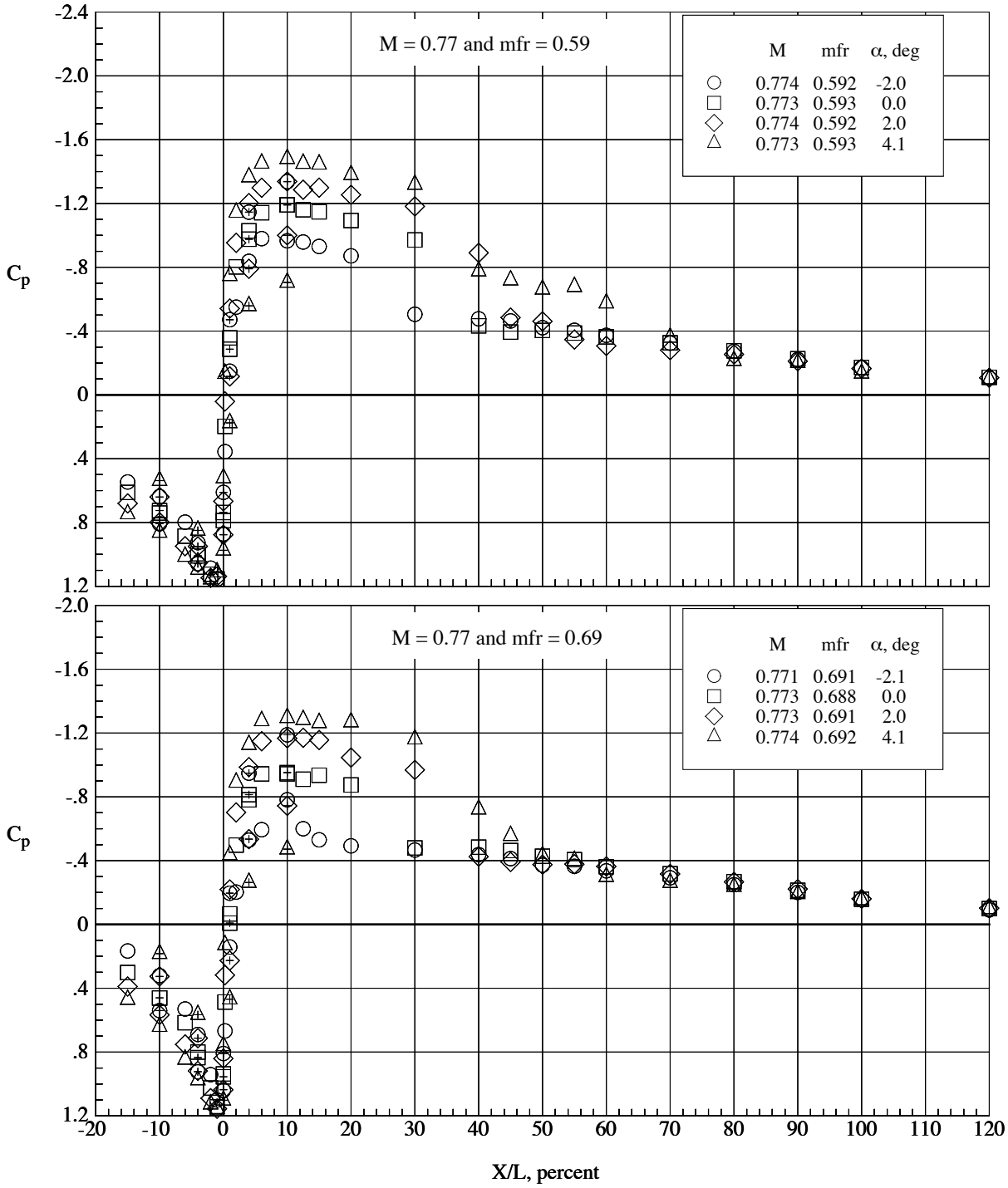
(b) M = 0.69 and 0.74.

Figure 8.- Continued.



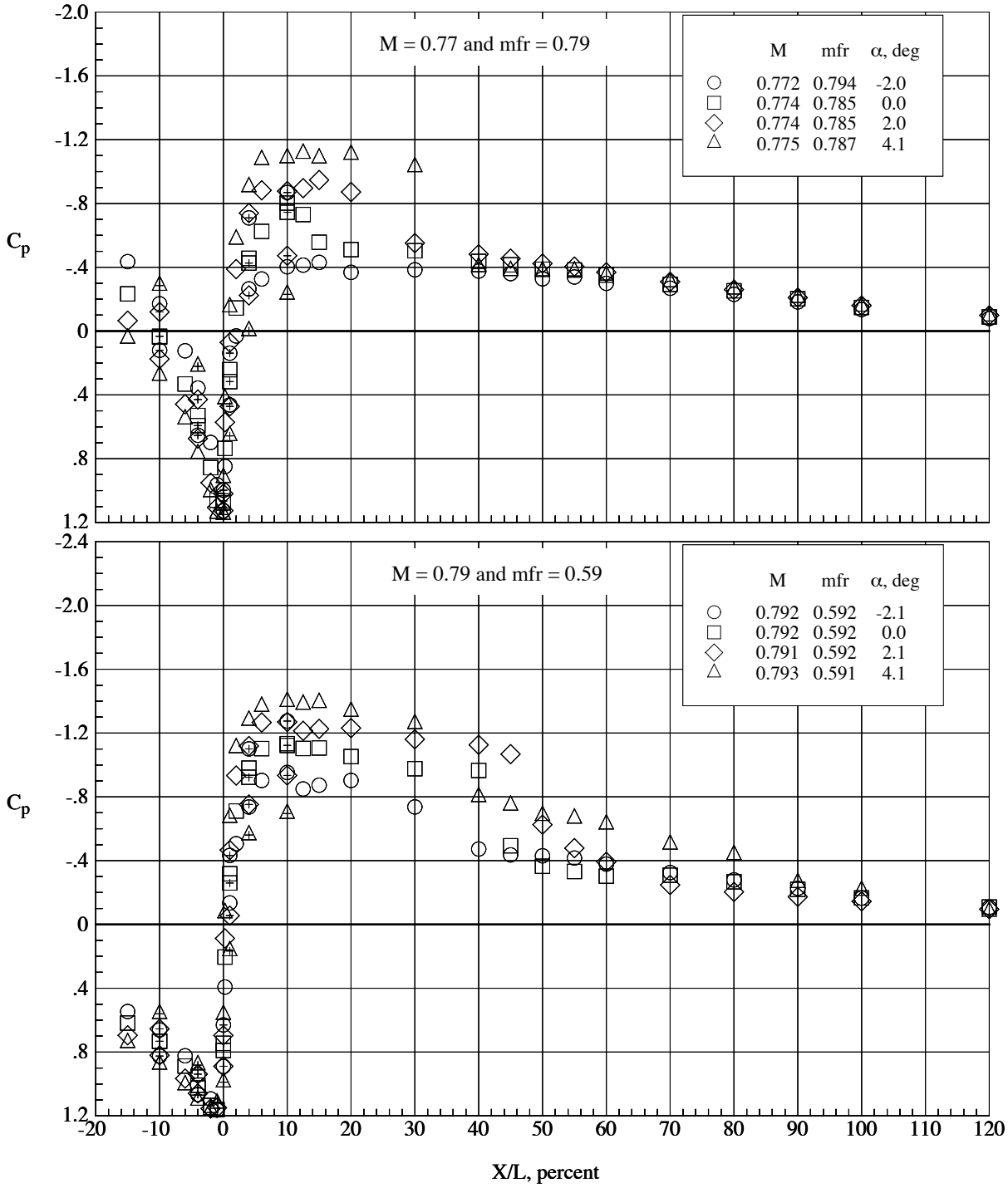
(c) M = 0.74 and 0.77.

Figure 8.- Continued.



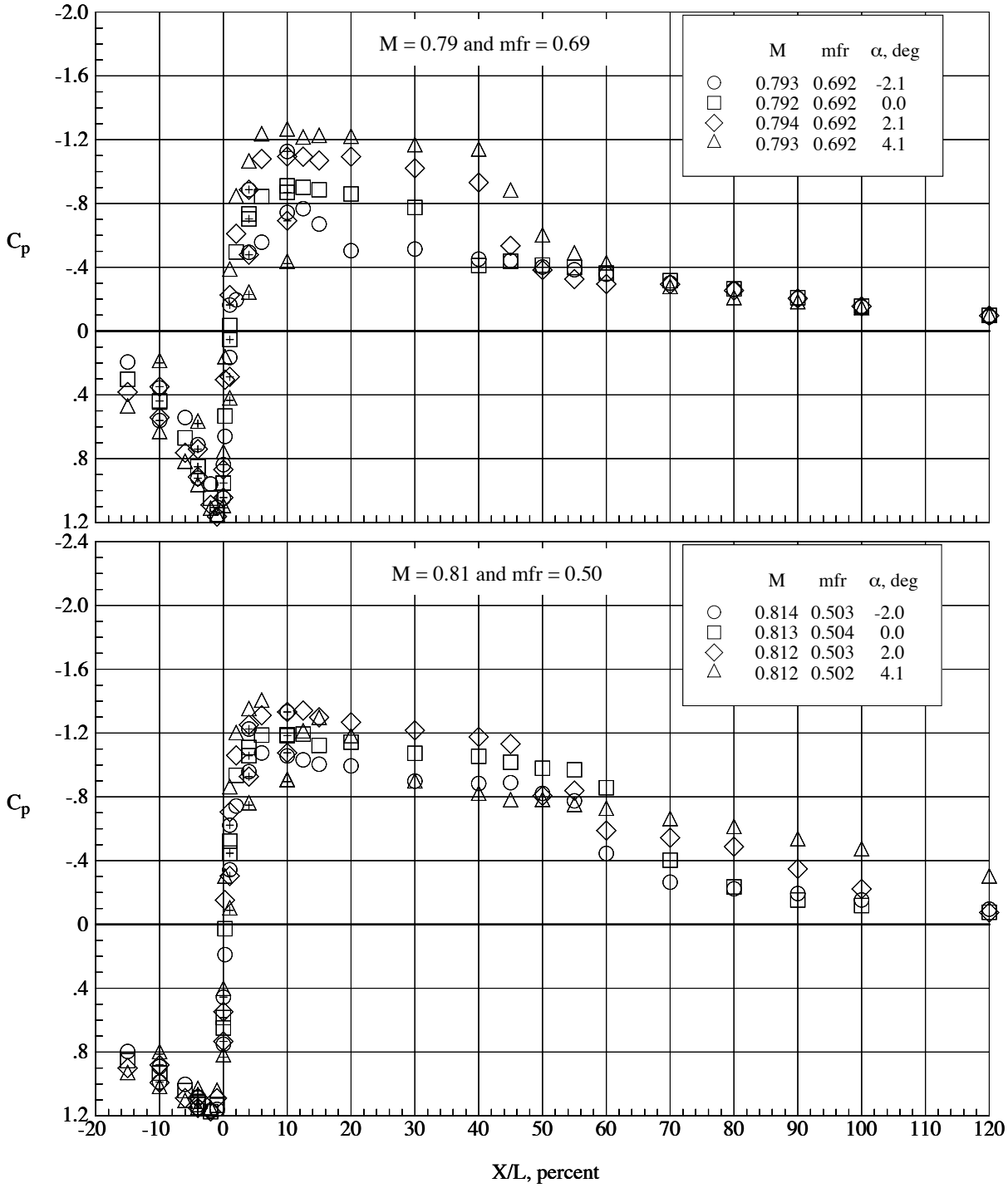
(d) M = 0.77.

Figure 8.- Continued.



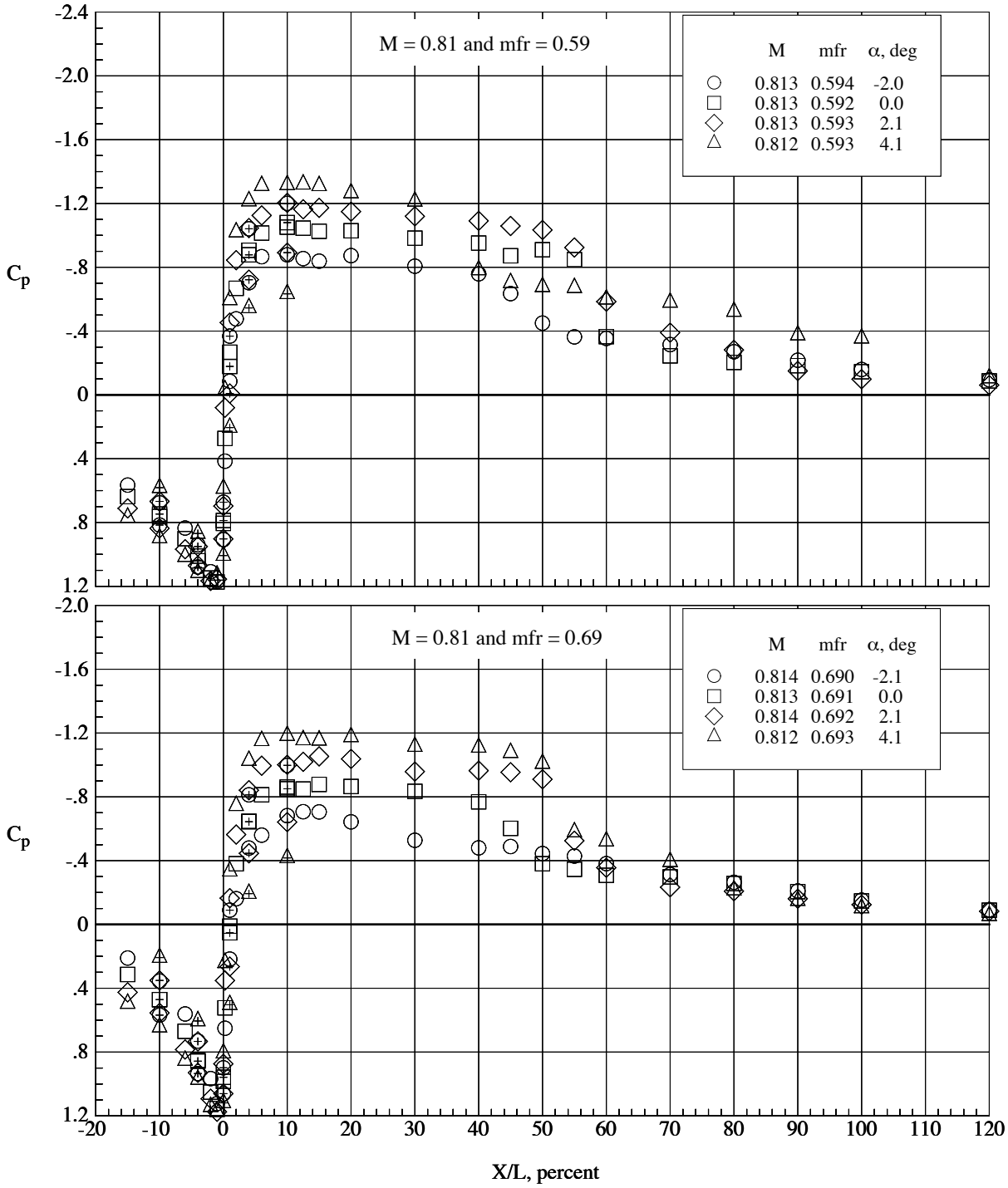
(e) M = 0.77 and 0.79.

Figure 8.- Continued.



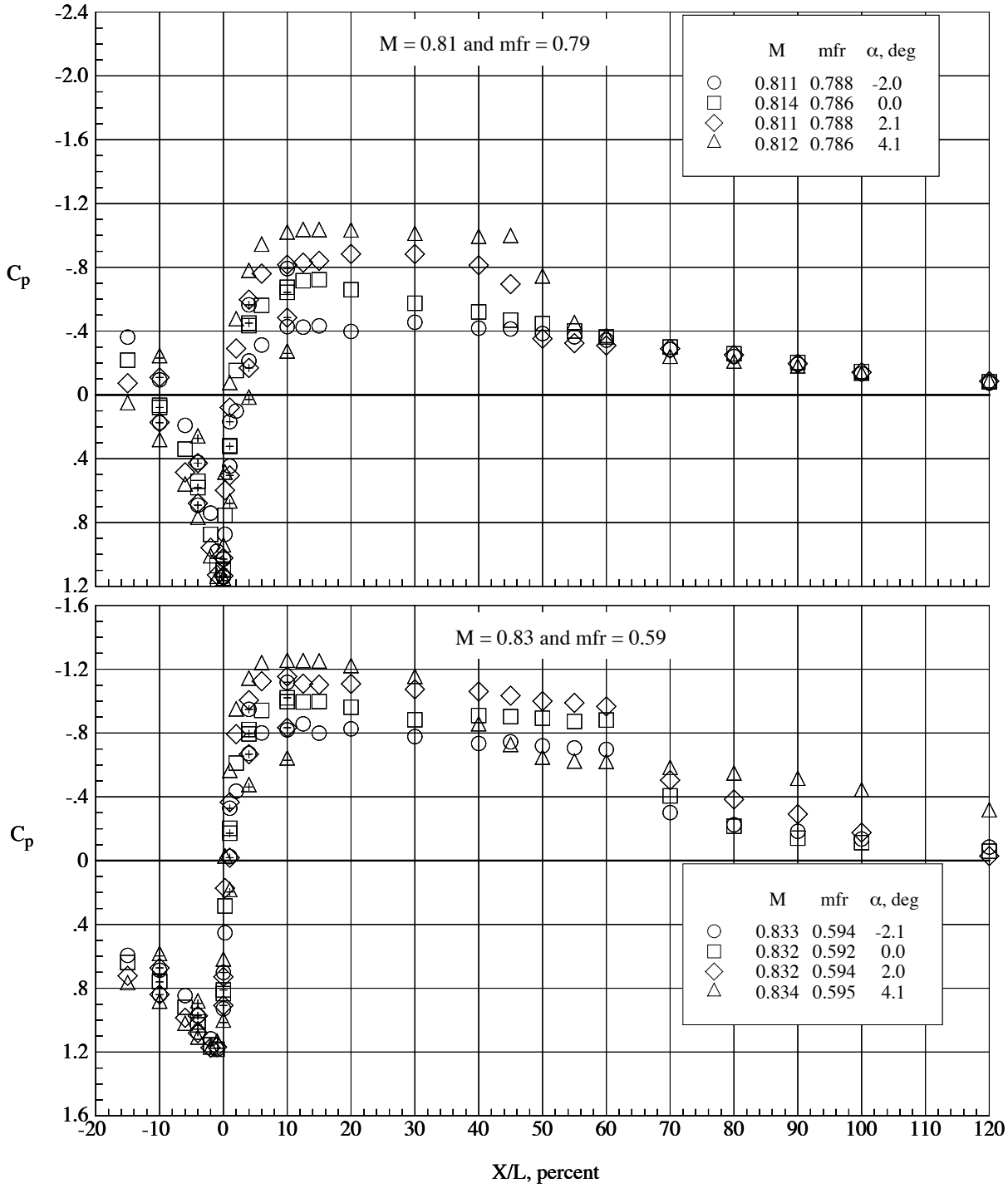
(f) M = 0.79 and 0.81.

Figure 8.- Continued.



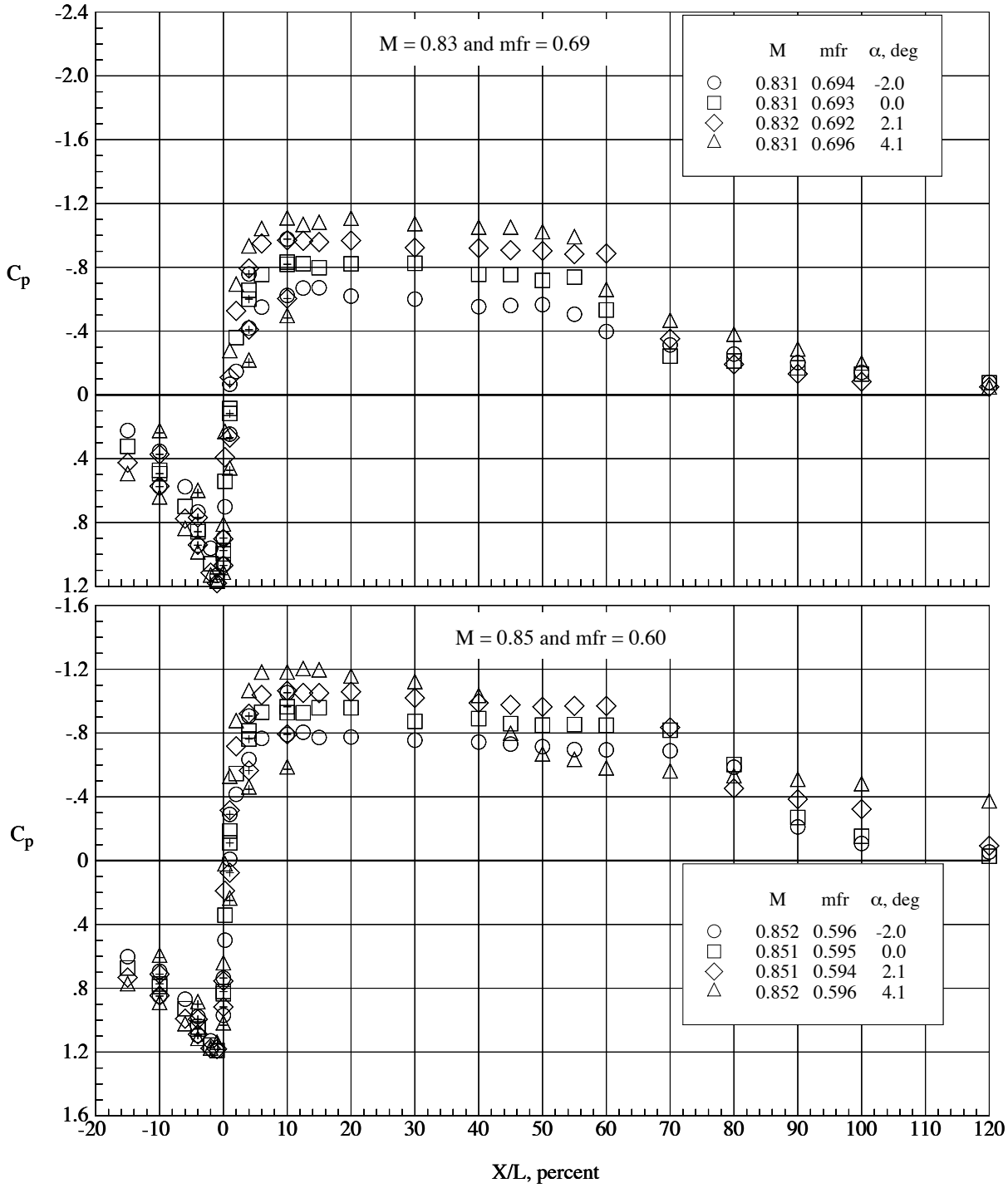
(g) M = 0.81.

Figure 8.- Continued.



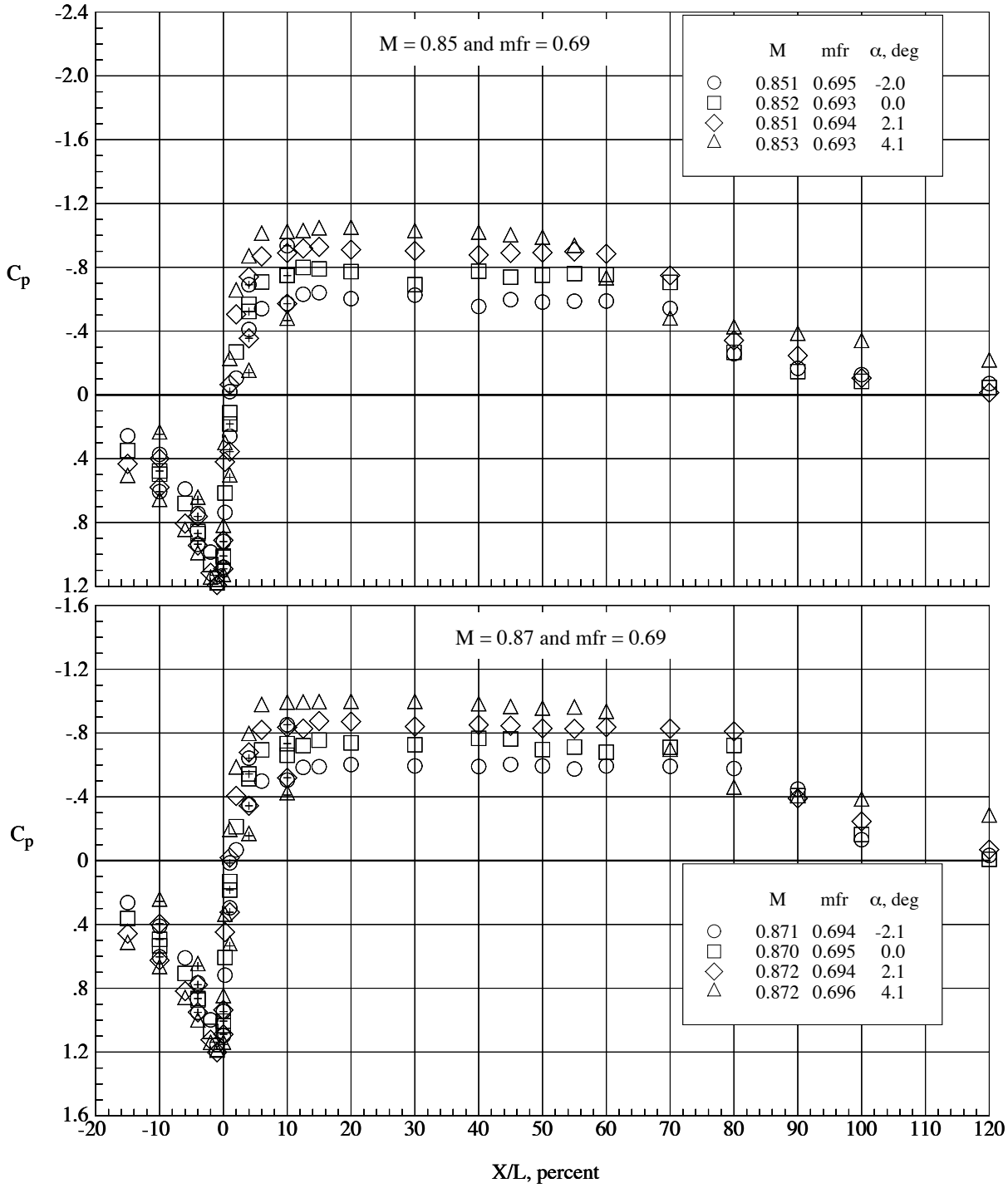
(h) M = 0.81 and 0.83.

Figure 8.- Continued.



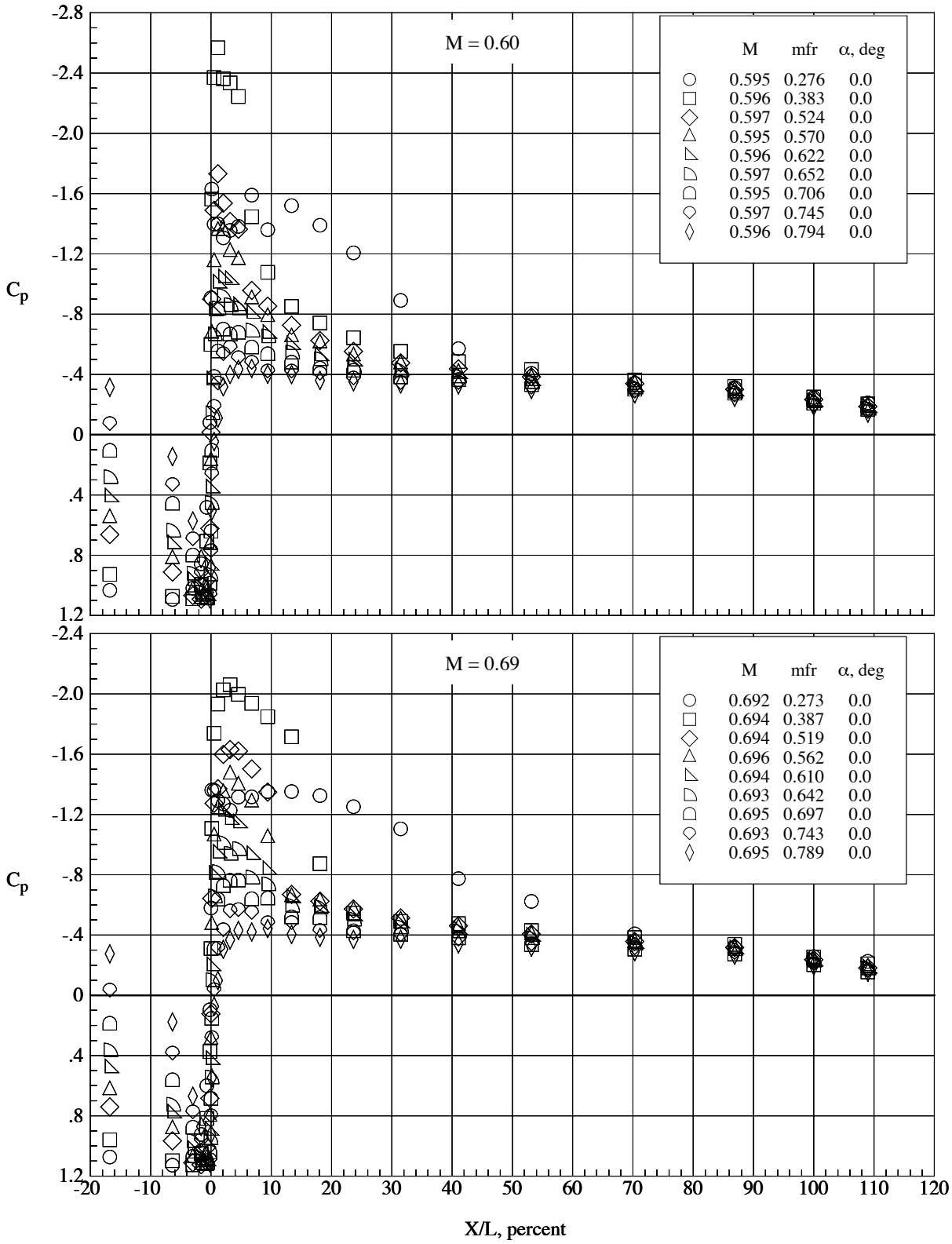
(i) M = 0.83 and 0.85.

Figure 8.- Continued.



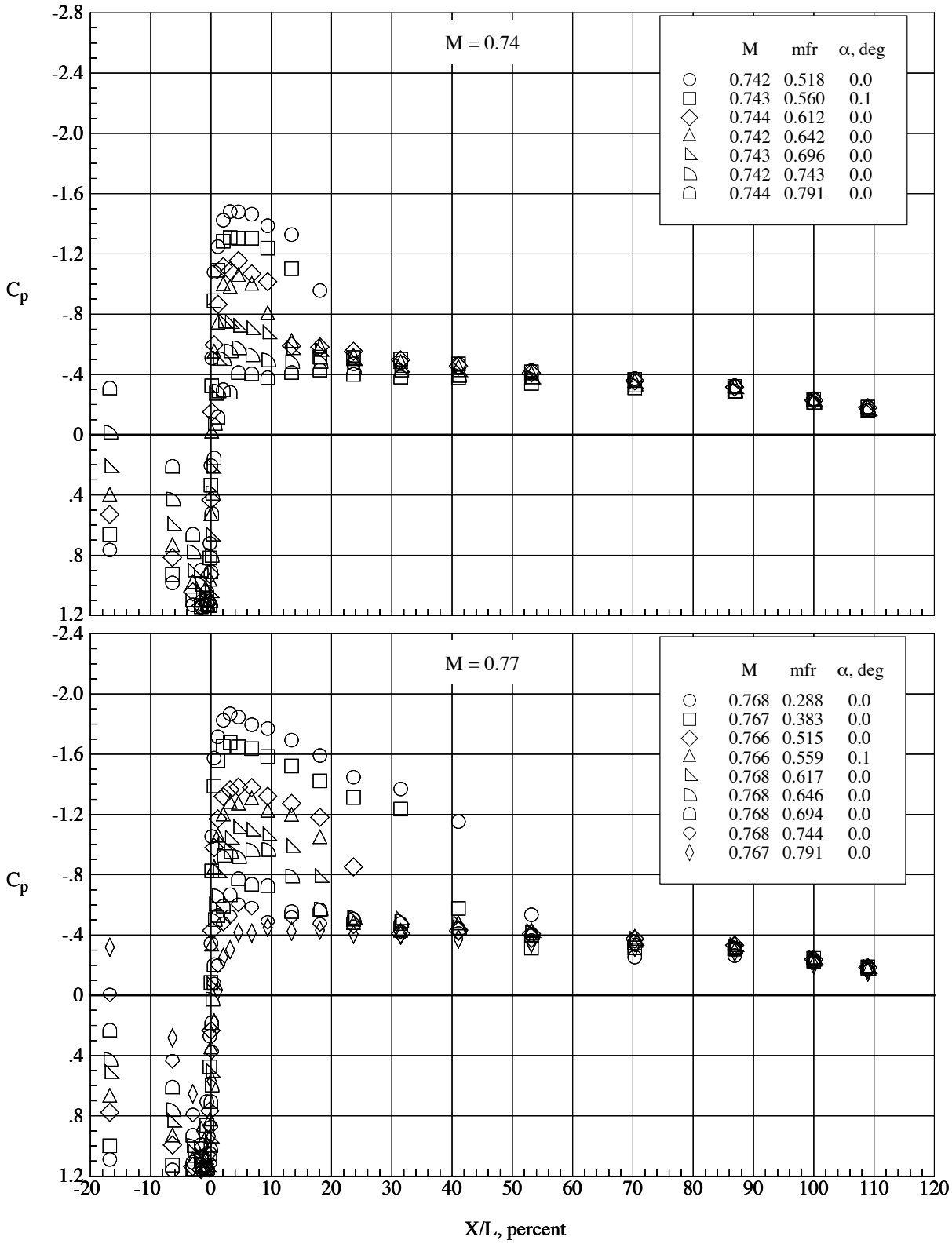
(j) M = 0.85 and 0.87.

Figure 8.- Concluded.



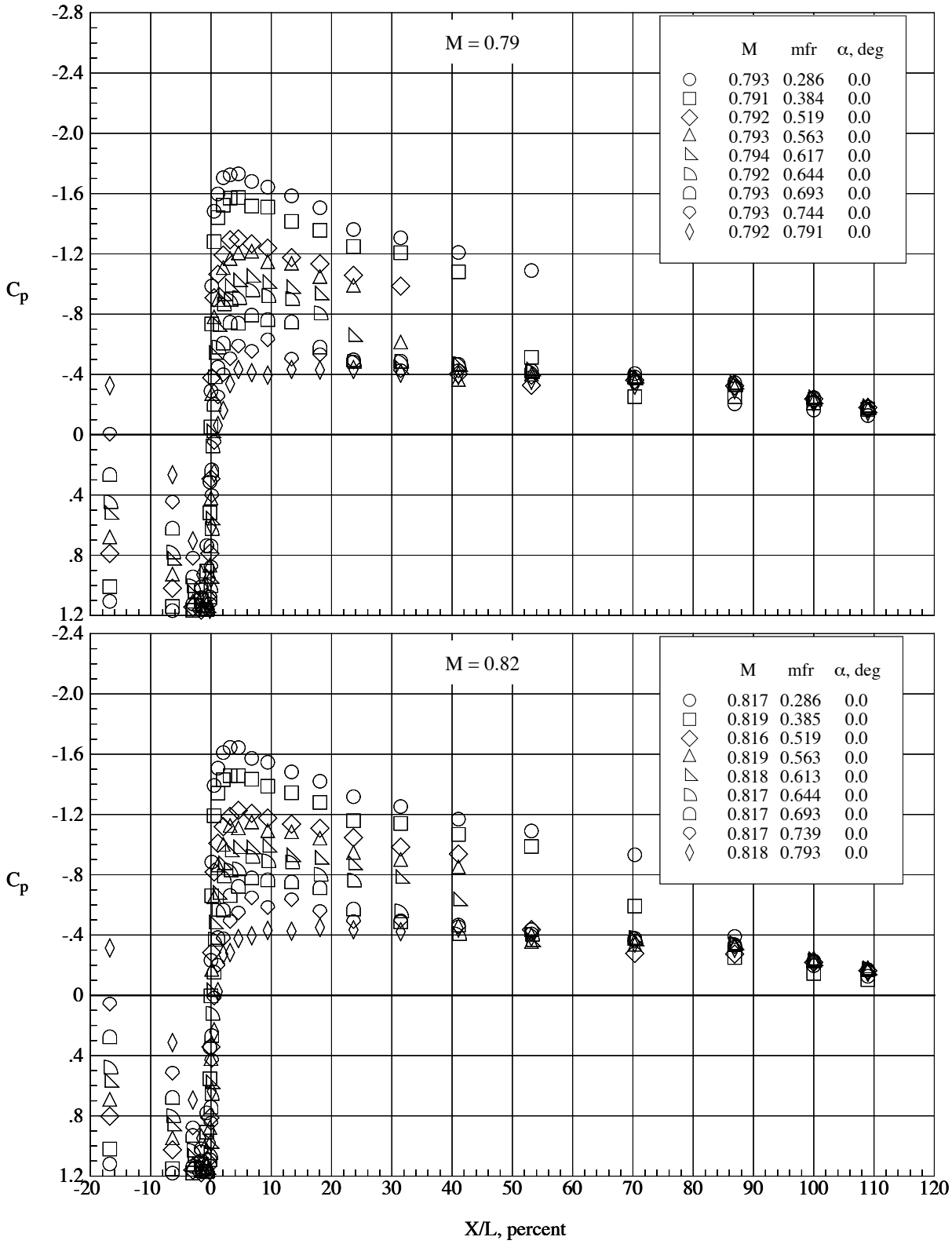
(a) M = 0.60 and 0.69.

Figure 9.- Pressure coefficient variation with X/L for Cowl B for several mass-flow ratios at $\alpha = 0°$.



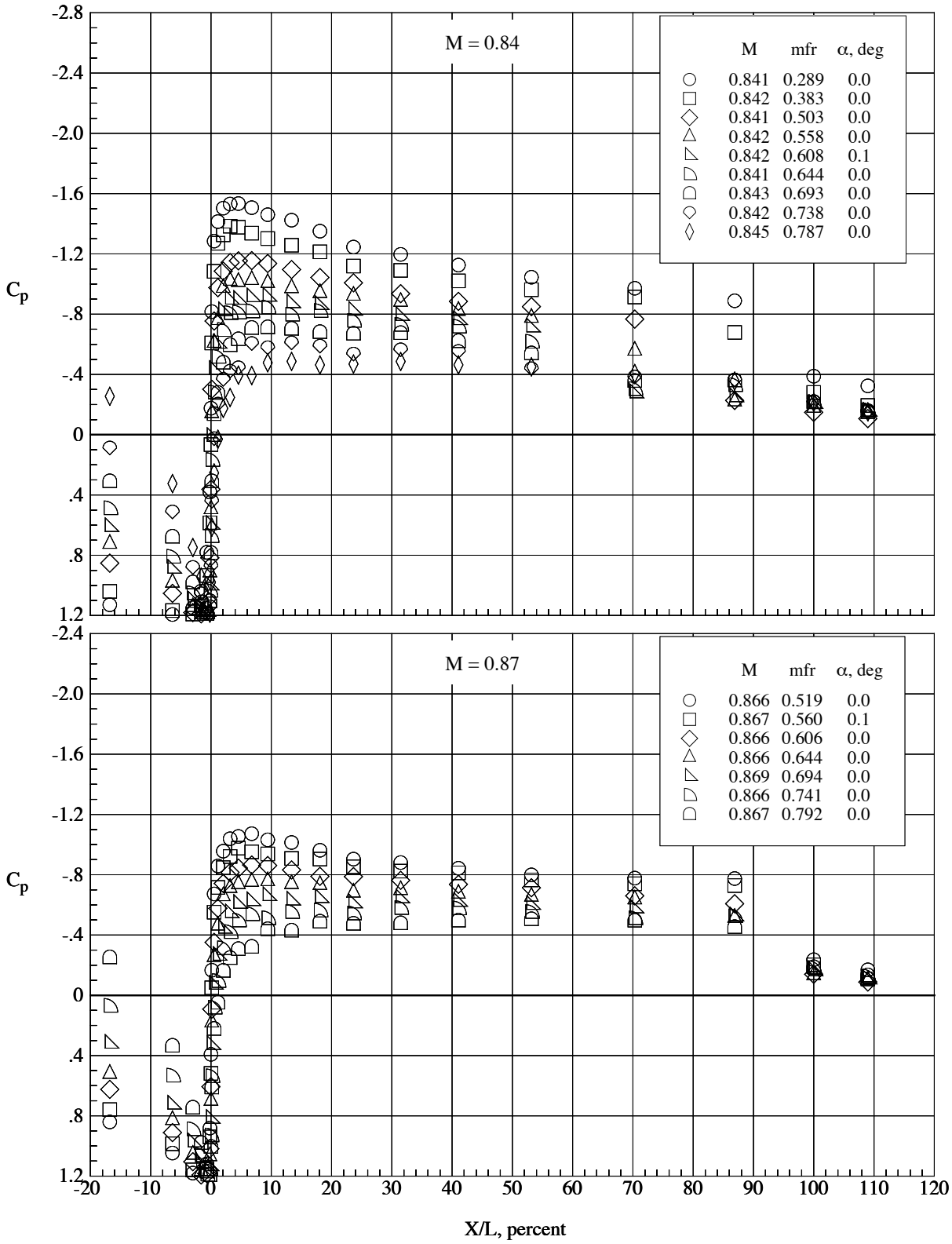
(b) M = 0.74 and 0.77.

Figure 9.- Continued.



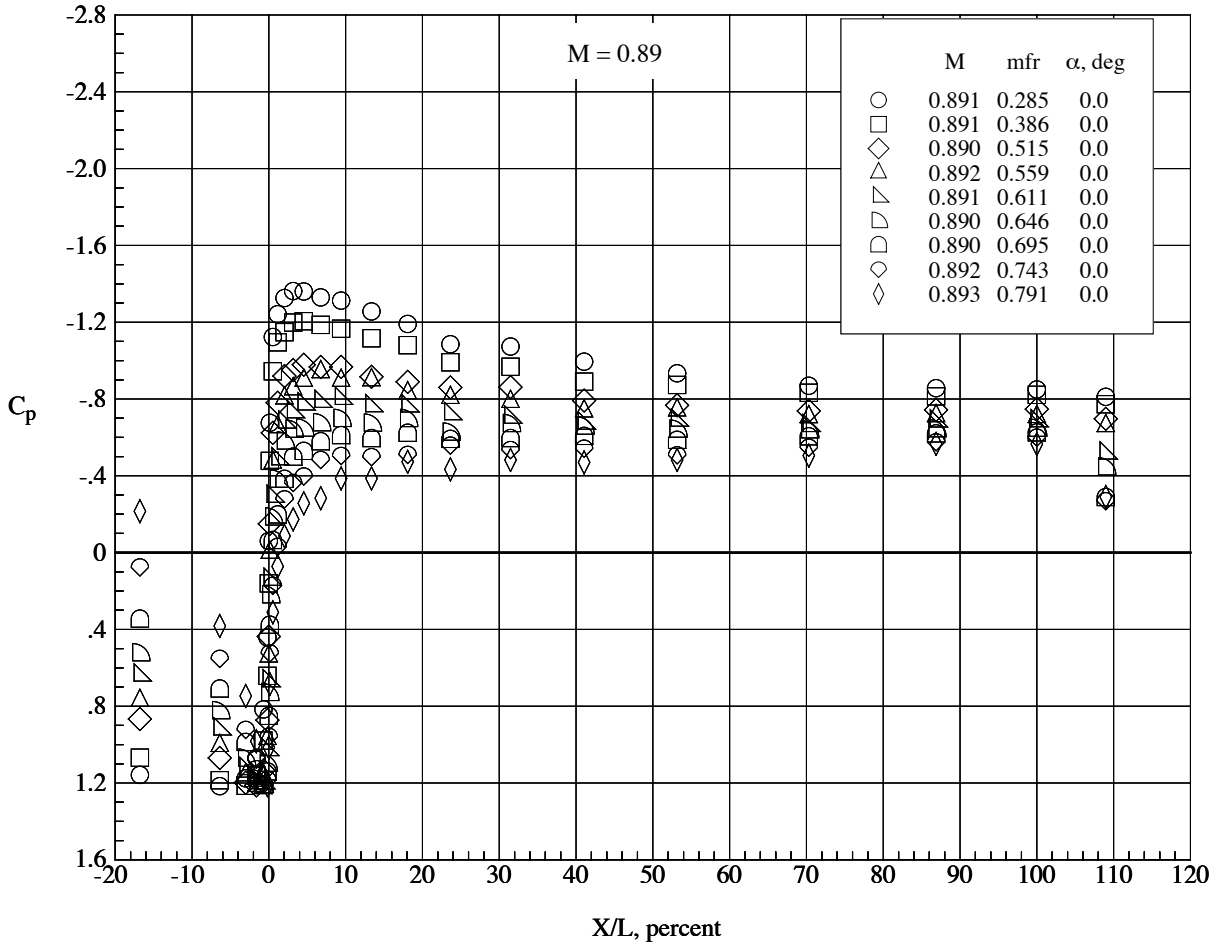
(c) M = 0.79 and 0.82.

Figure 9.- Continued.



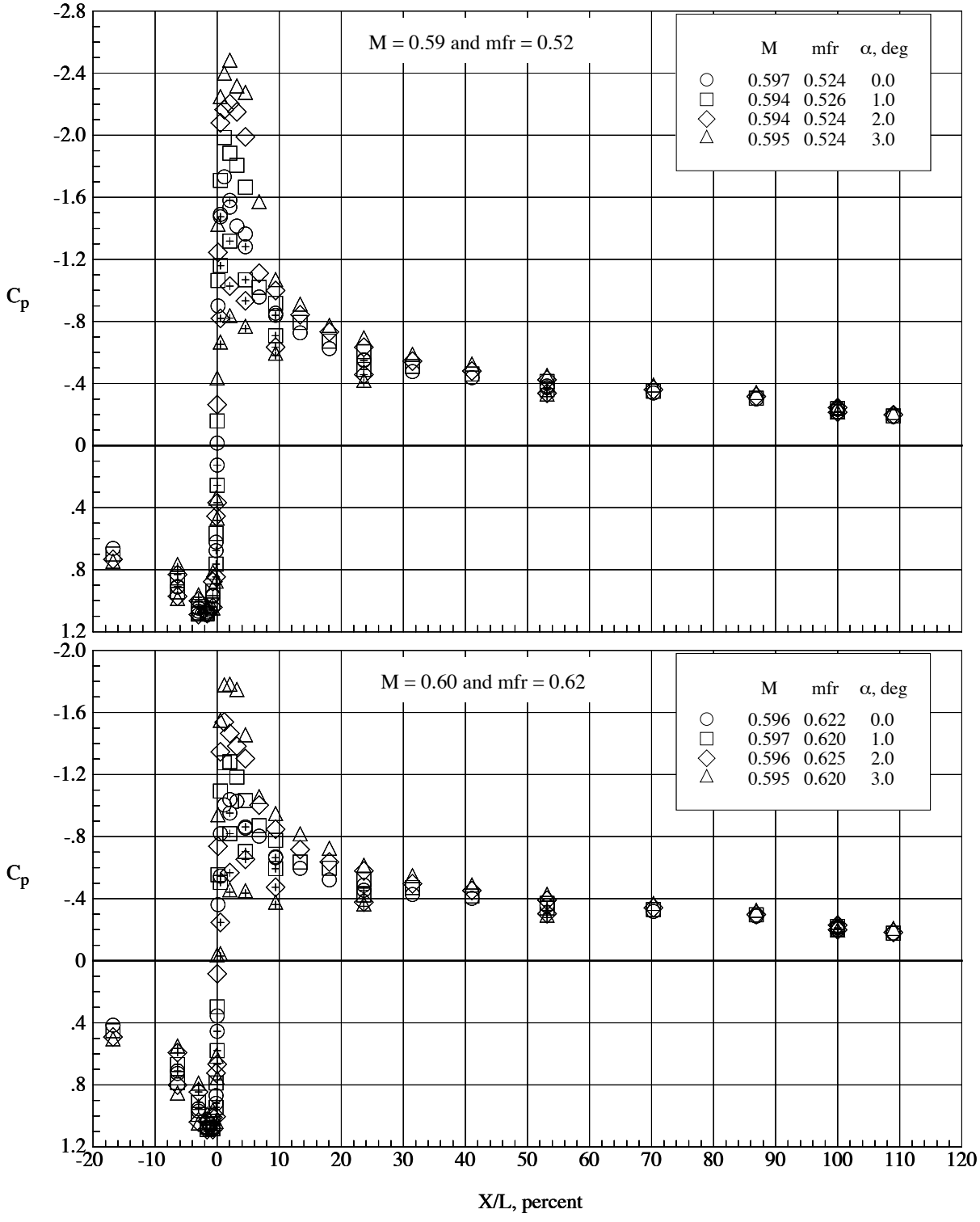
(d) M = 0.84 and 0.87.

Figure 9.- Continued.



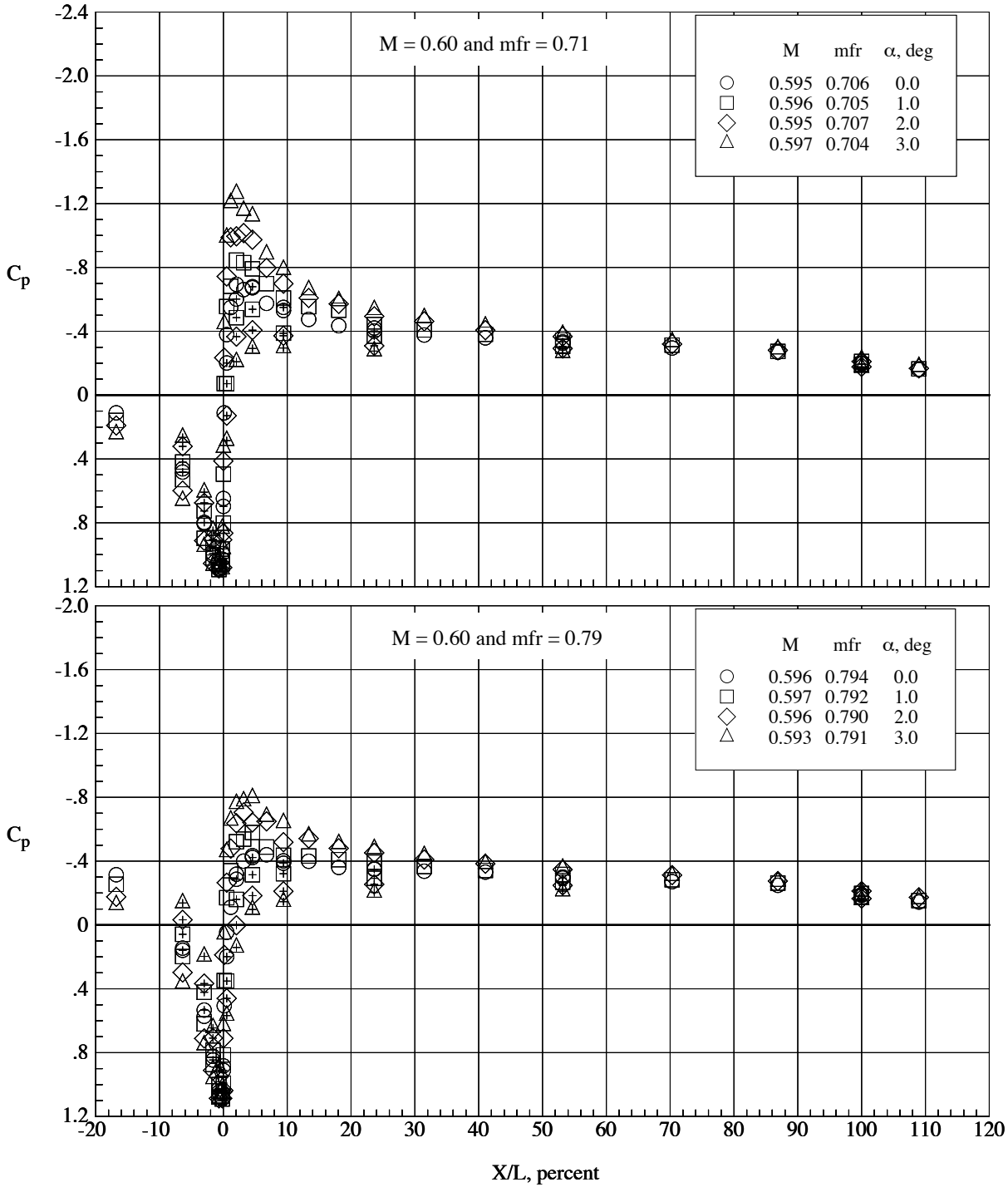
(e) M = 0.89.

Figure 9.- Concluded.



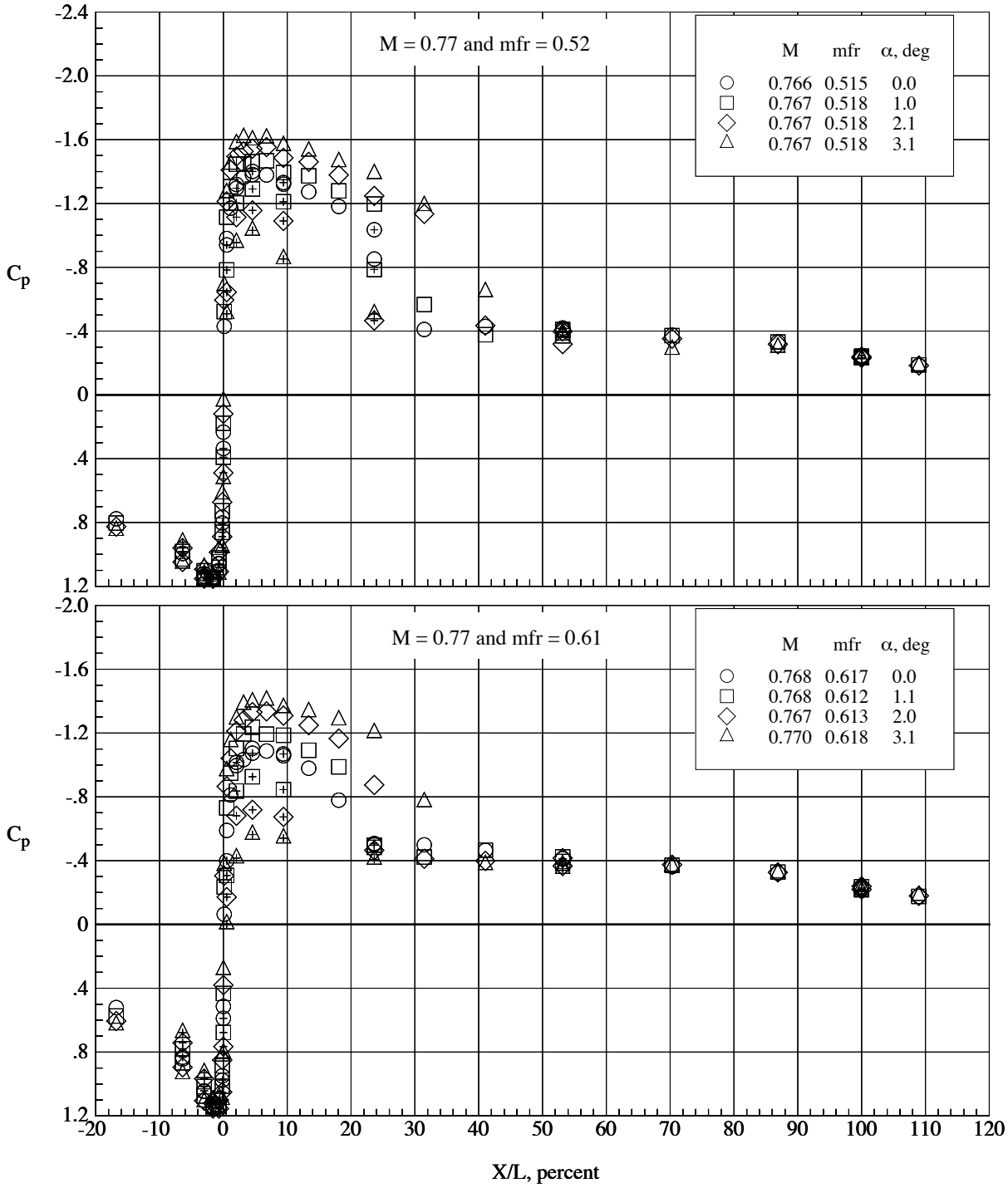
(a) M = 0.60.

Figure 10.- Pressure coefficient variation with X/L along the $\phi = 0°$ (plain symbols) and 180° (symbols with plus signs) meridians for Cowl B at various Mach numbers and mass-flow ratios at several angles of attack.



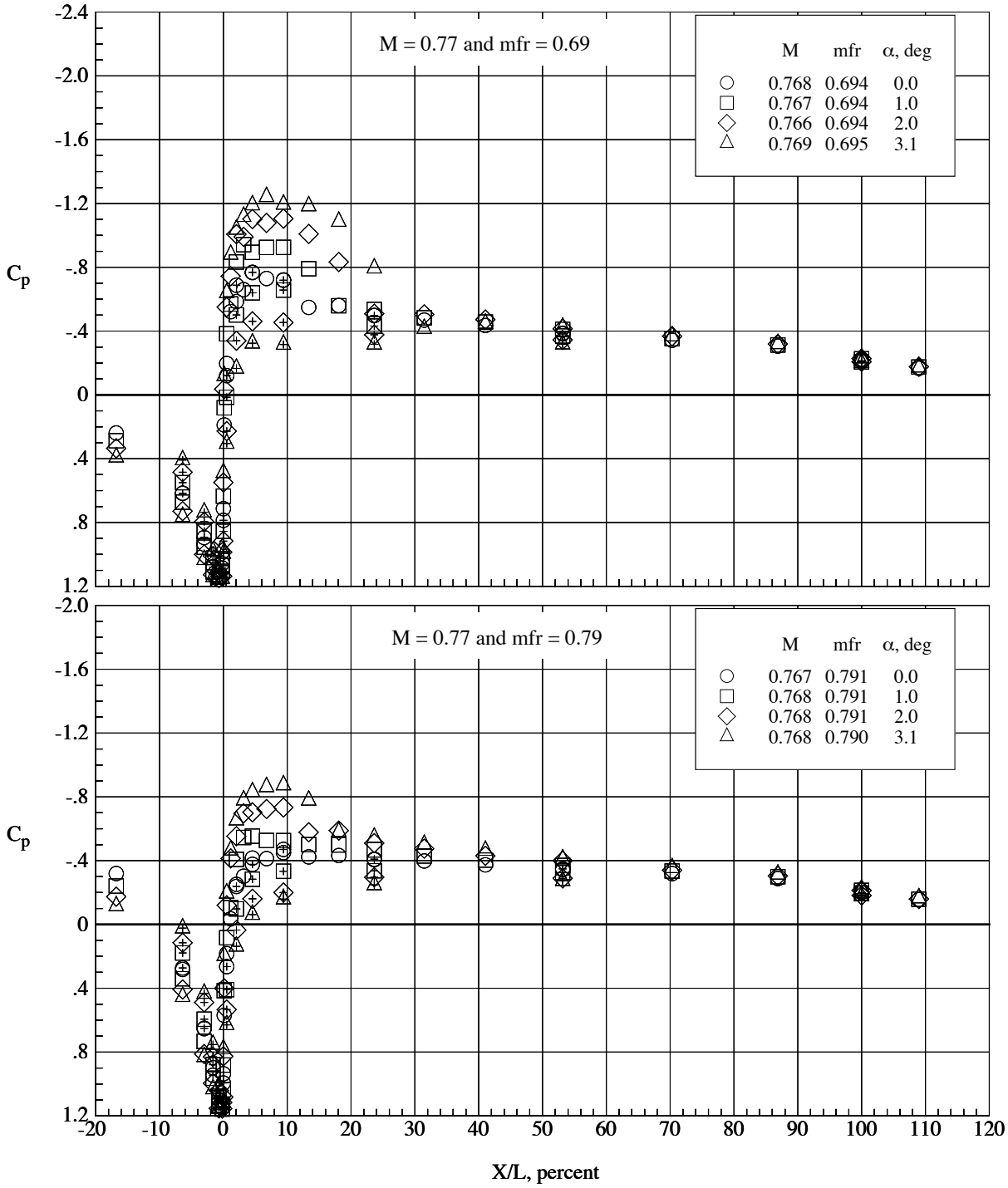
(b) M = 0.60.

Figure 10.- Continued.



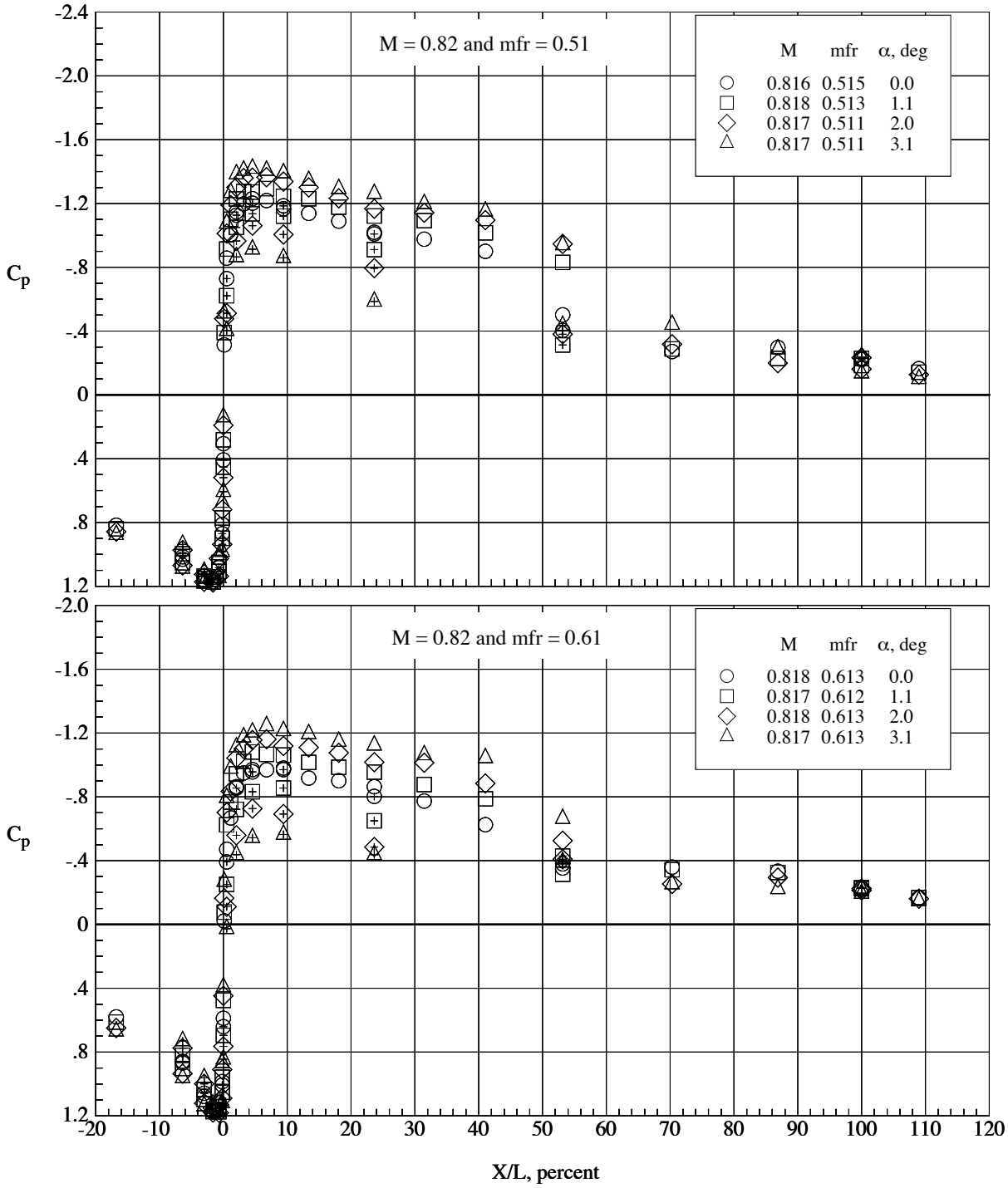
(c) M = 0.77.

Figure 10.- Continued.



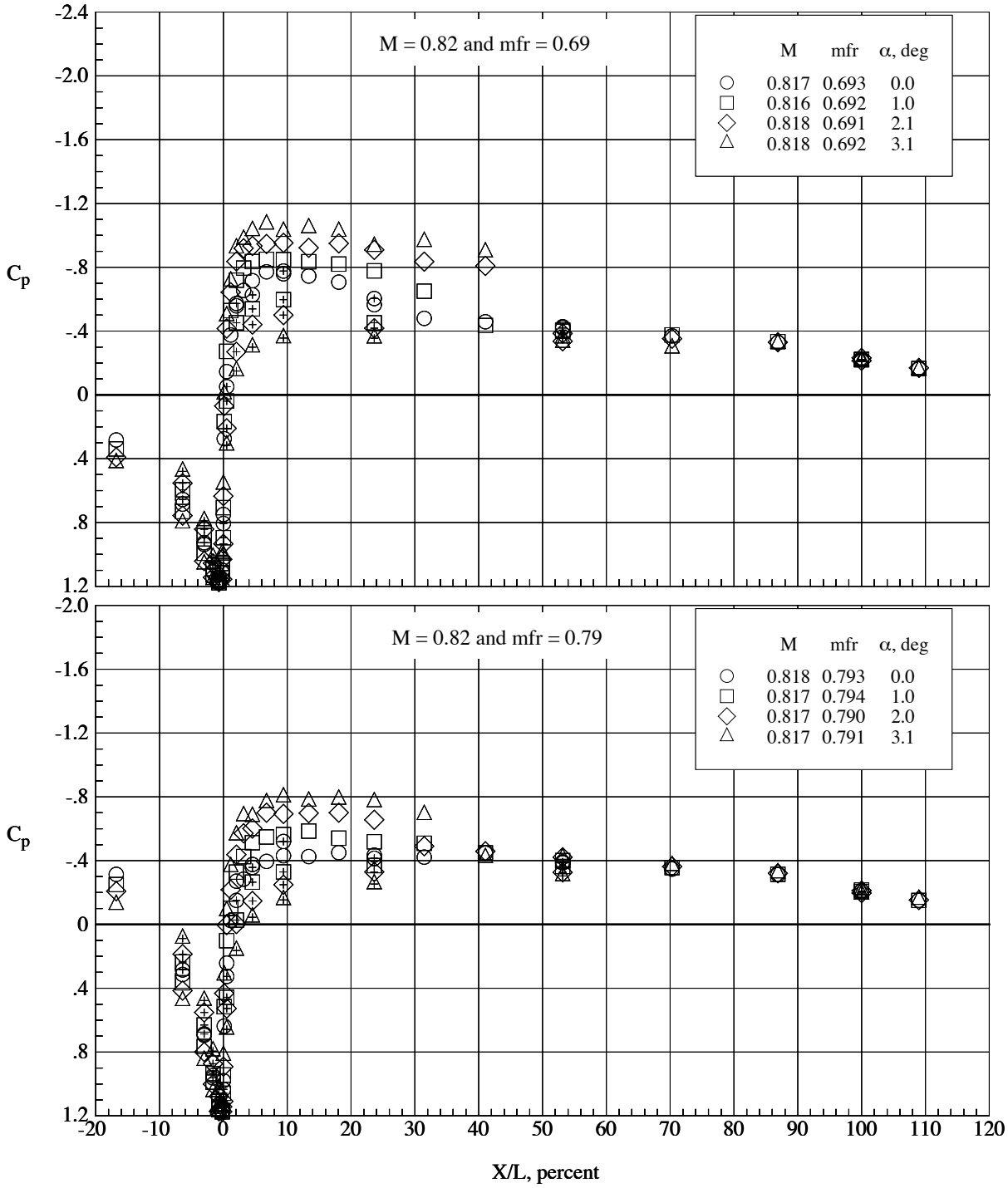
(d) M = 0.77.

Figure 10.- Continued.



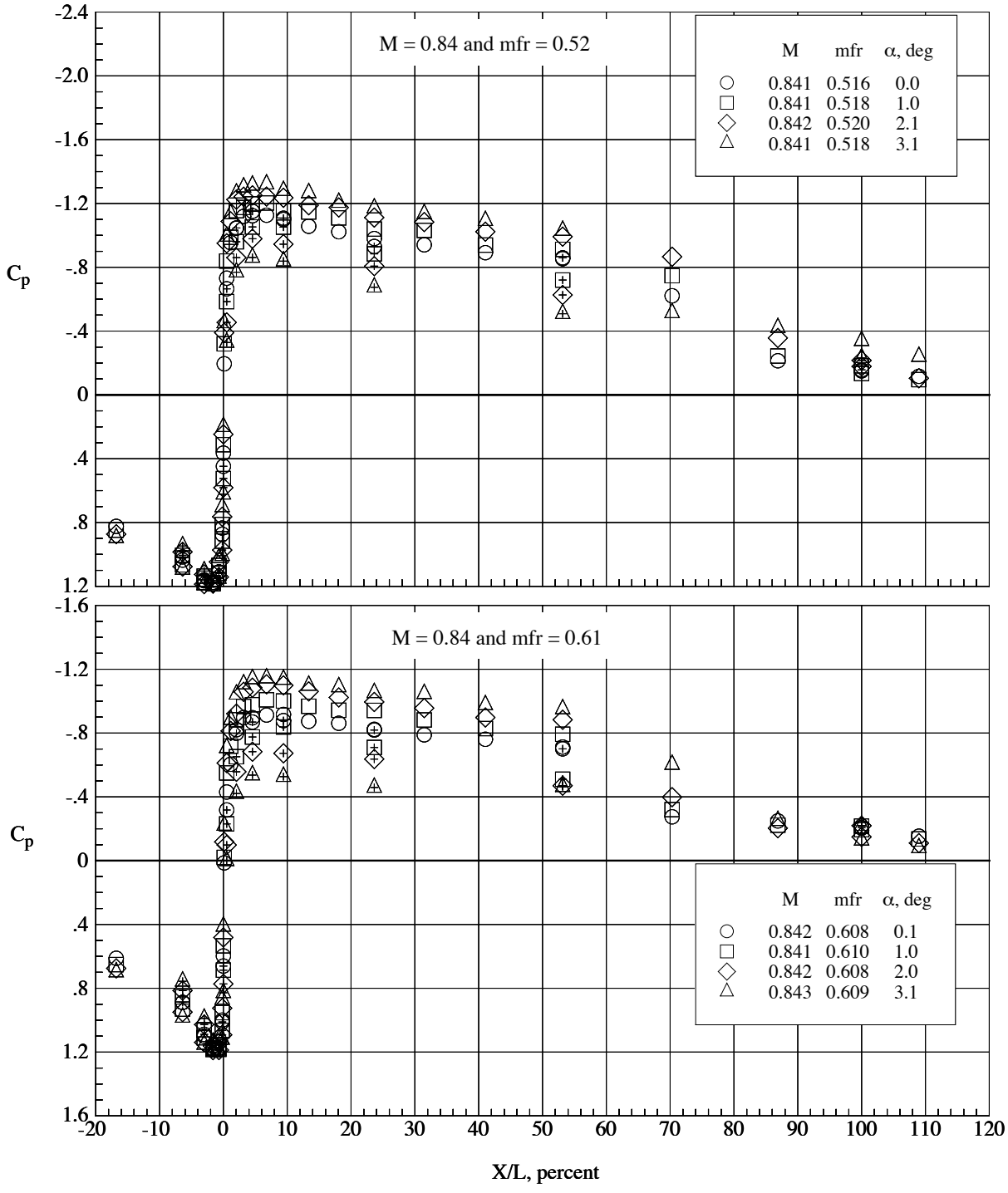
(e) M = 0.82.

Figure 10.- Continued.



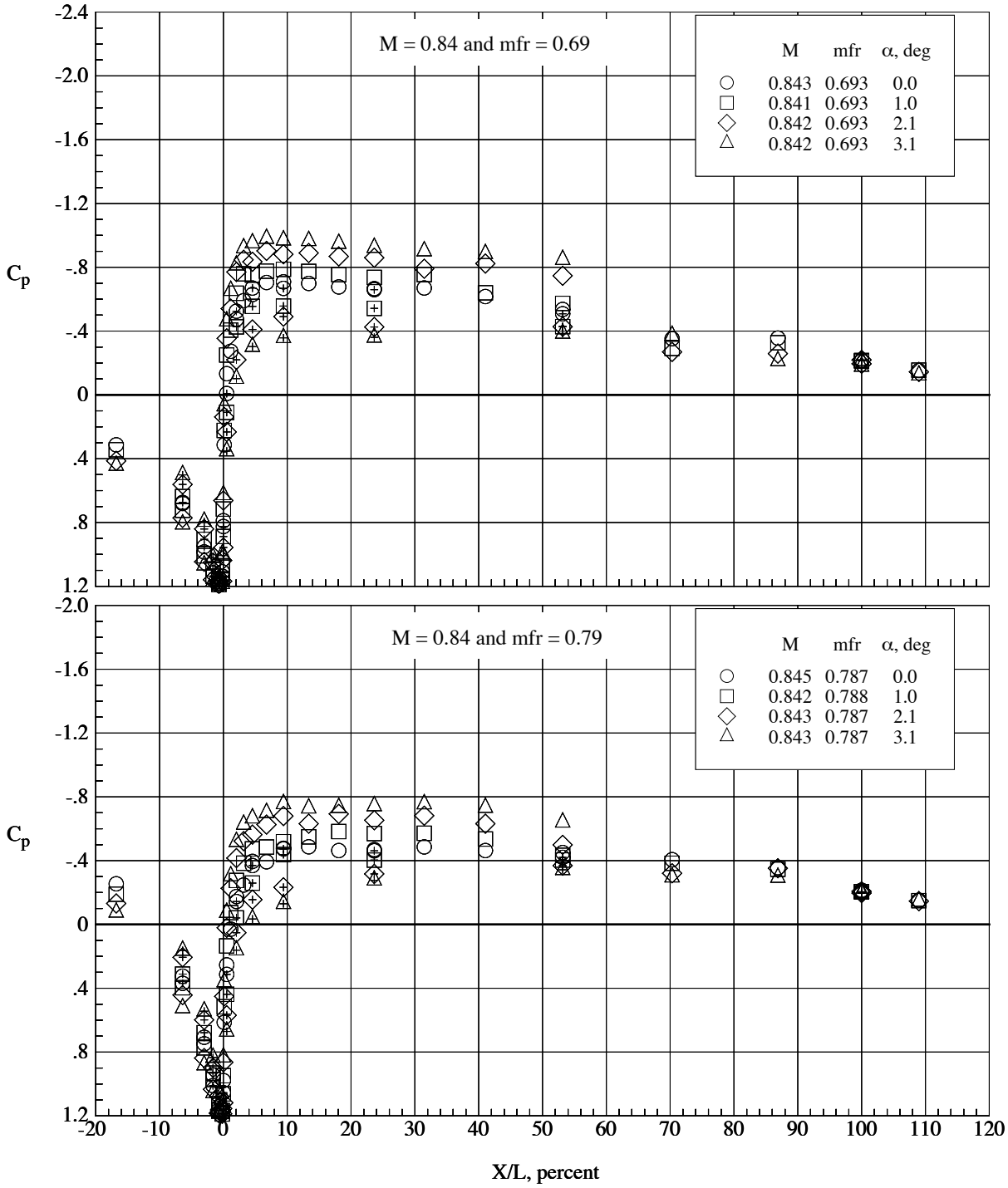
(f) M = 0.82.

Figure 10.- Continued.



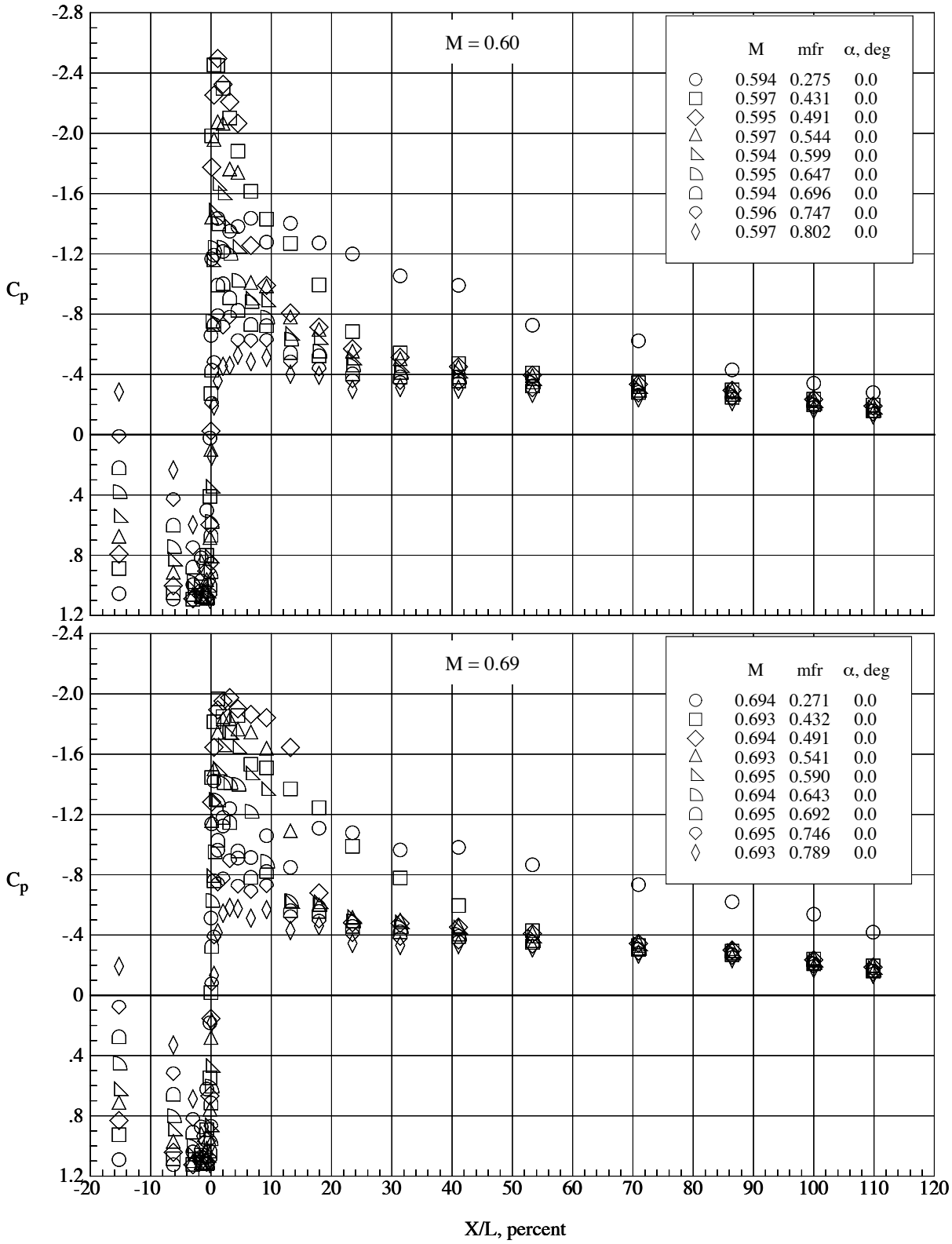
(g) M = 0.84.

Figure 10.- Continued.



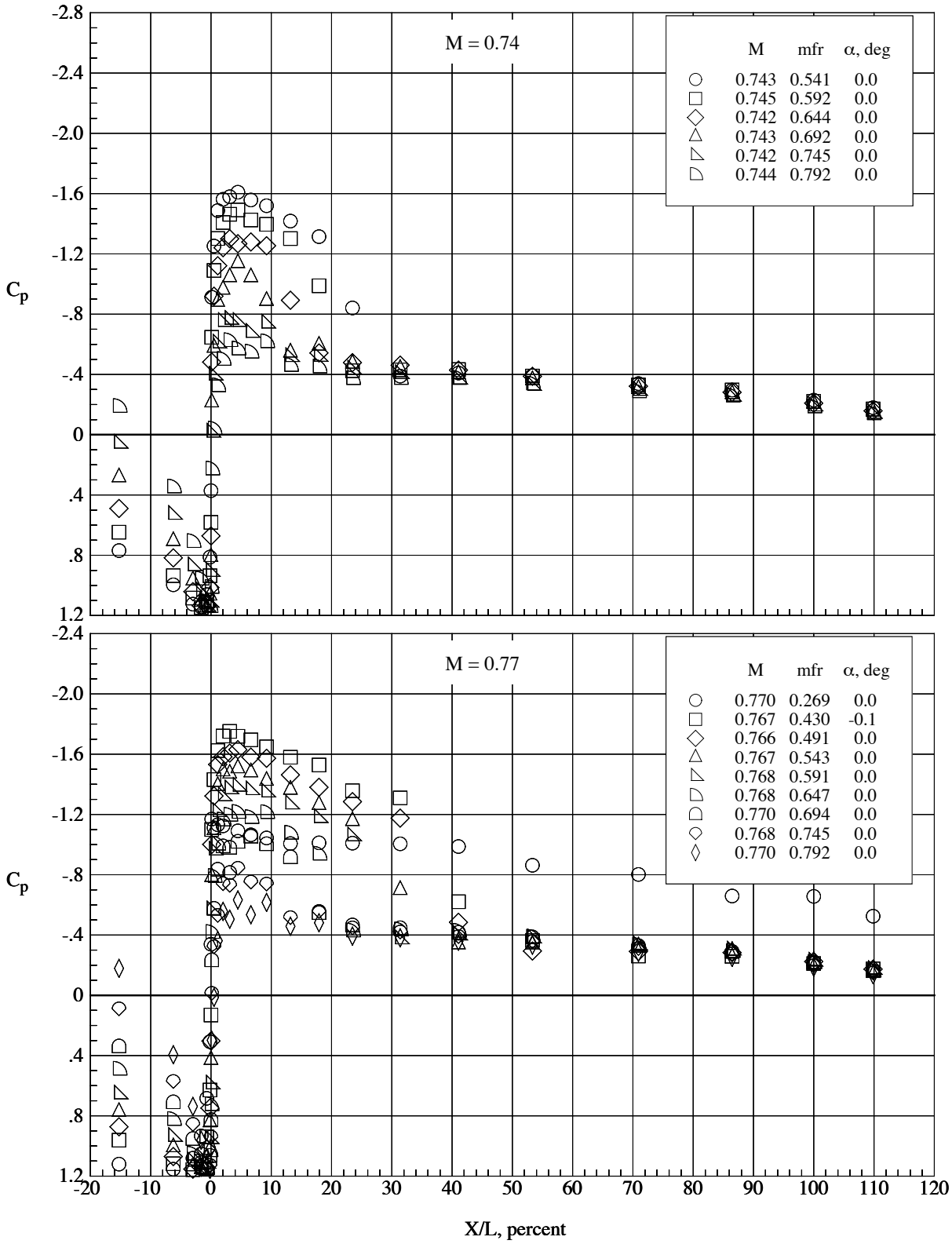
(h) M = 0.84.

Figure 10.- Concluded.



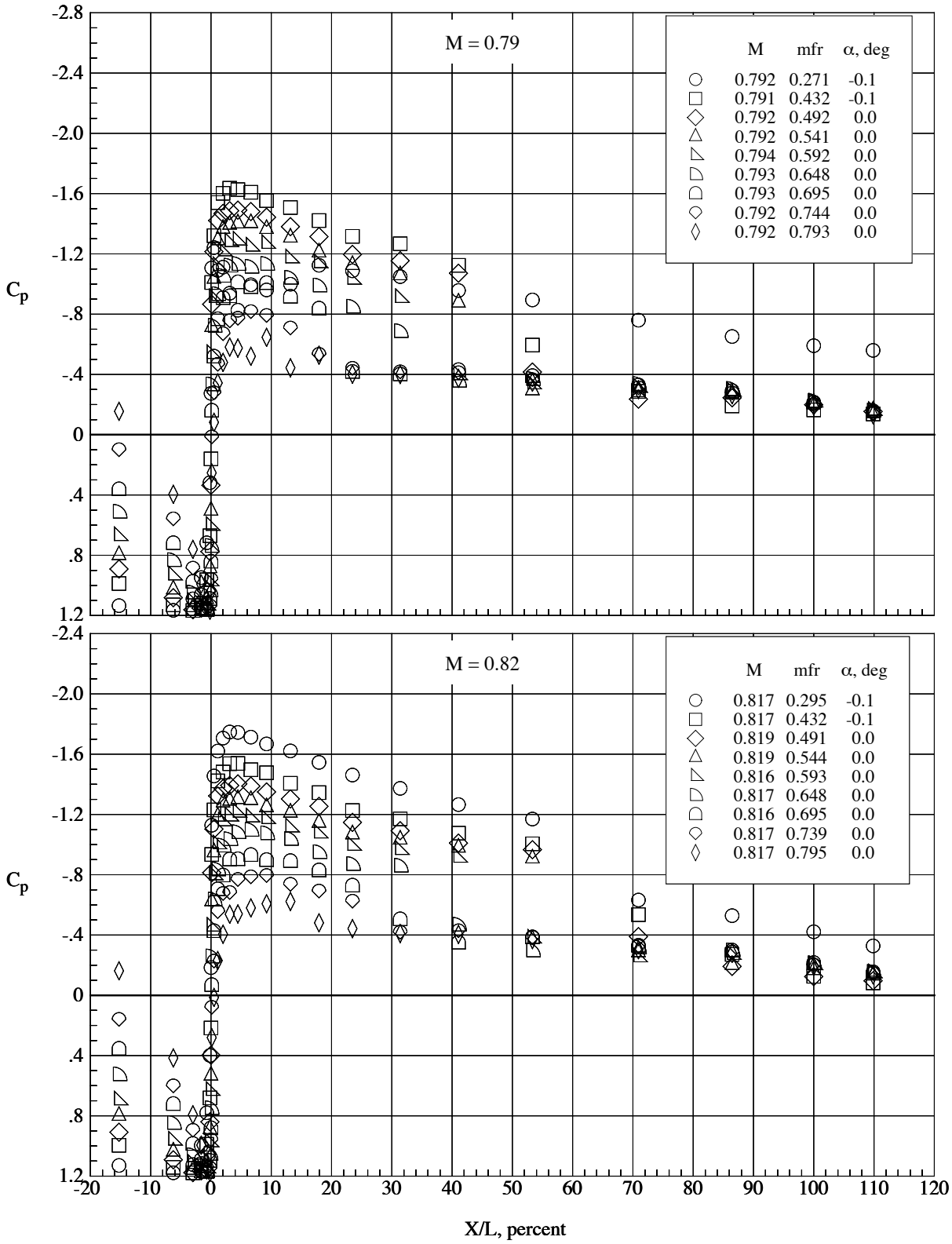
(a) M = 0.60 and 0.69.

Figure 11.- Pressure coefficient variation with X/L for Cowl E for several mass-flow ratios at $\alpha = 0°$.



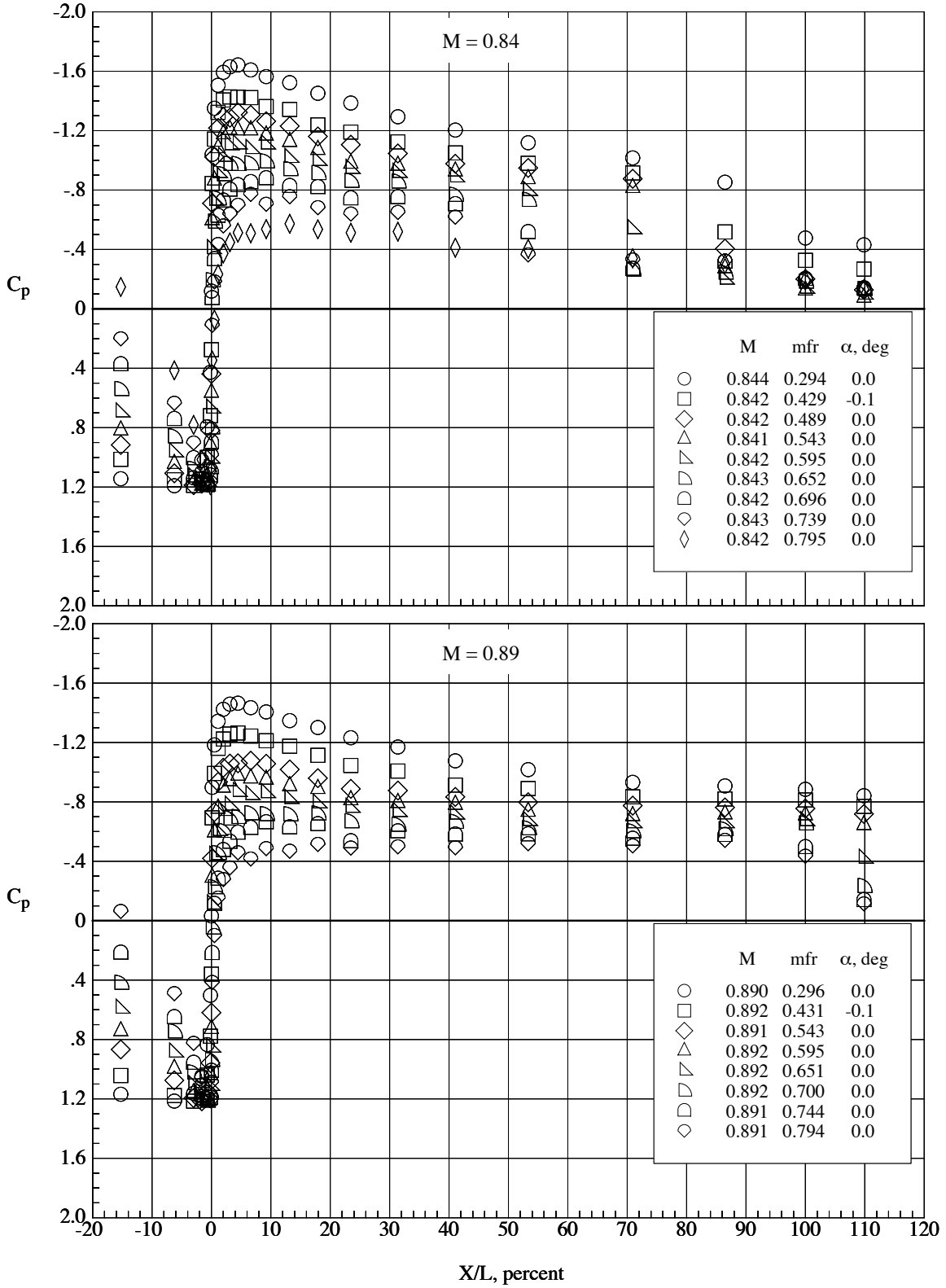
(b) M = 0.74 and 0.77.

Figure 11.- Continued.



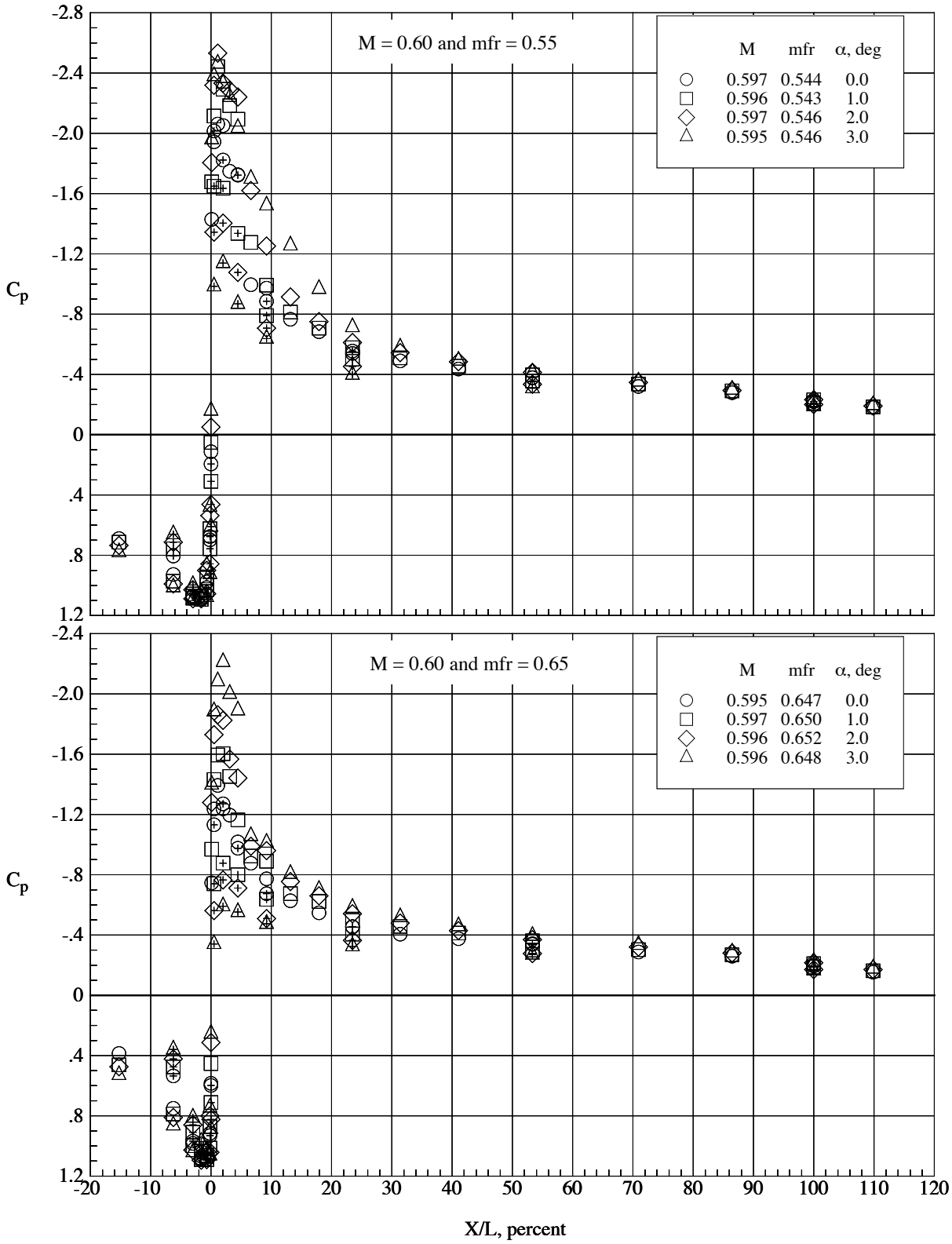
(c) M = 0.79 and 0.82.

Figure 11.- Continued.



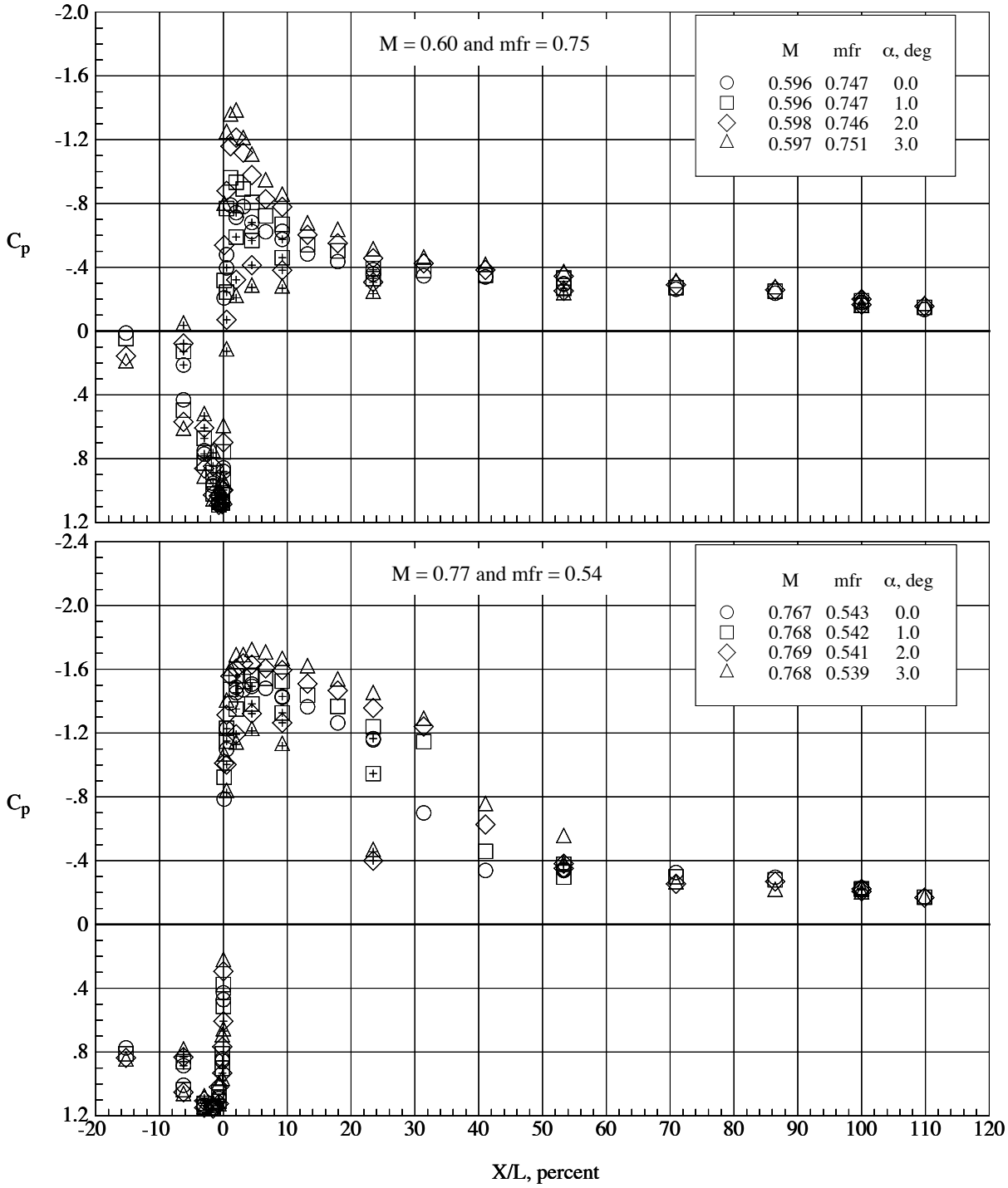
(d) M = 0.84 and 0.89.

Figure 11.- Concluded.



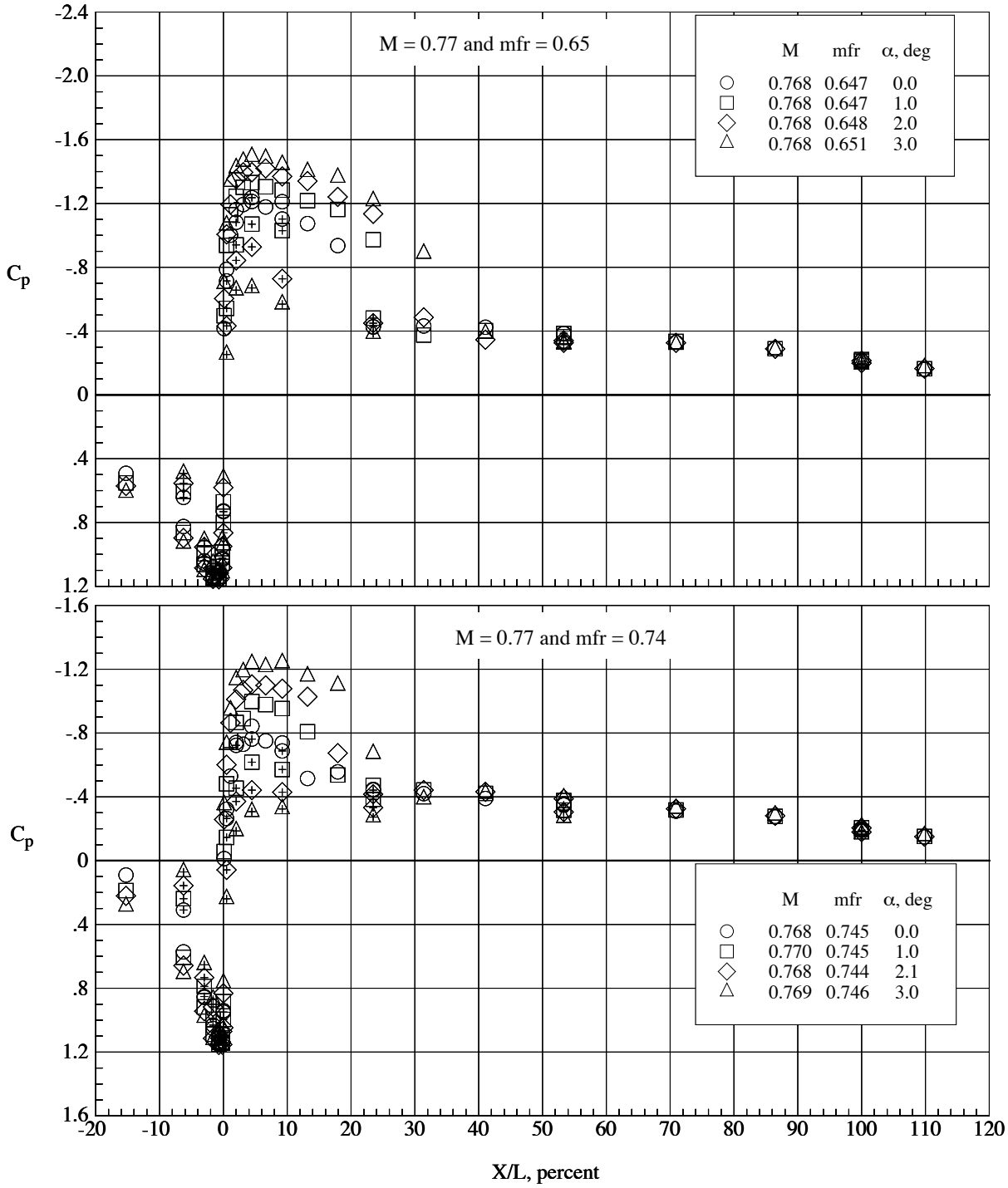
(a) M = 0.60.

Figure 12.- Pressure coefficient variation with X/L along the $\phi = 0°$ (plain symbols) and 180° (symbols with plus signs) meridians for Cowl E at various Mach numbers and mass-flow ratios at several angles of attack.



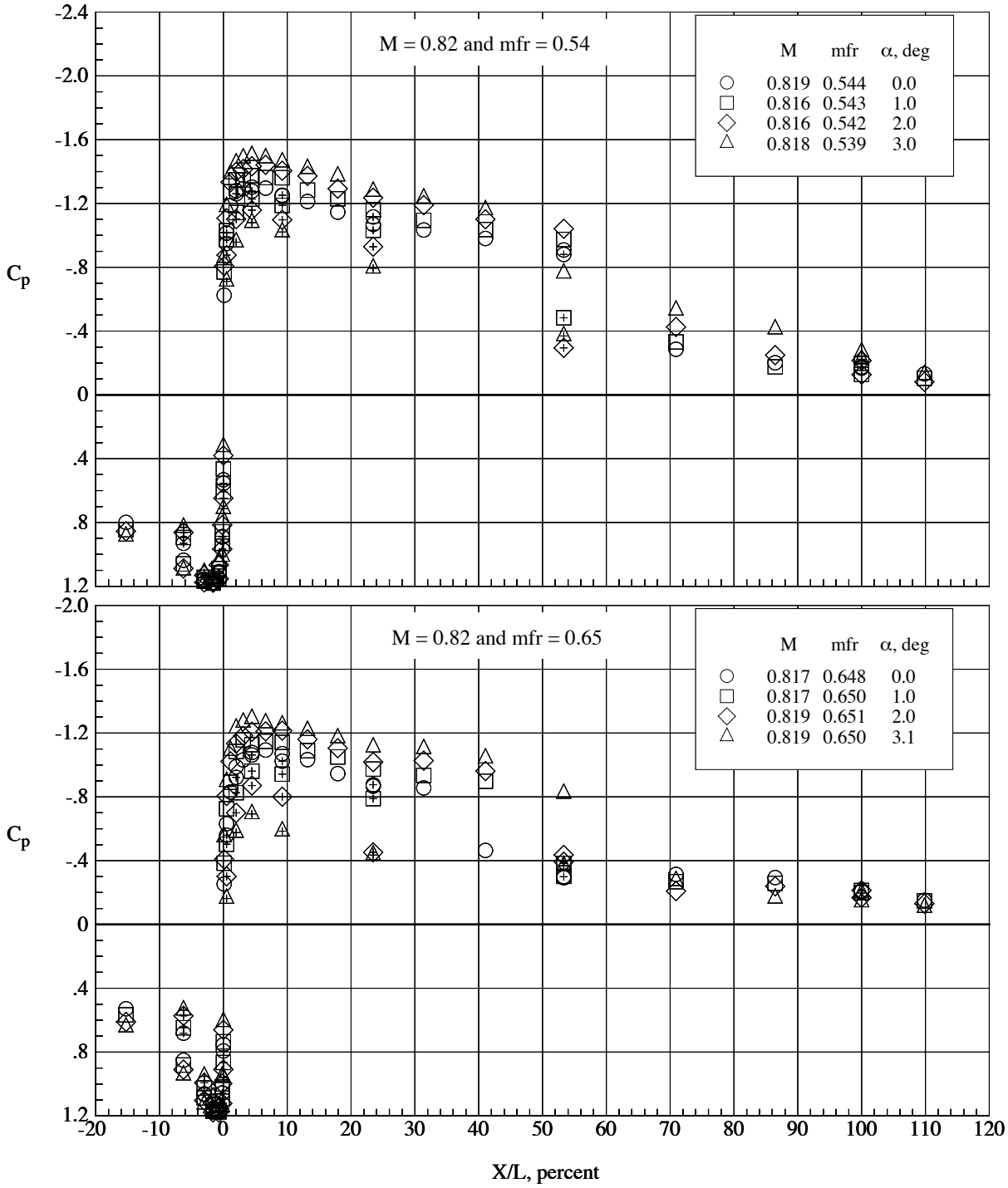
(b) M = 0.60 and 0.77.

Figure 12.- Continued.



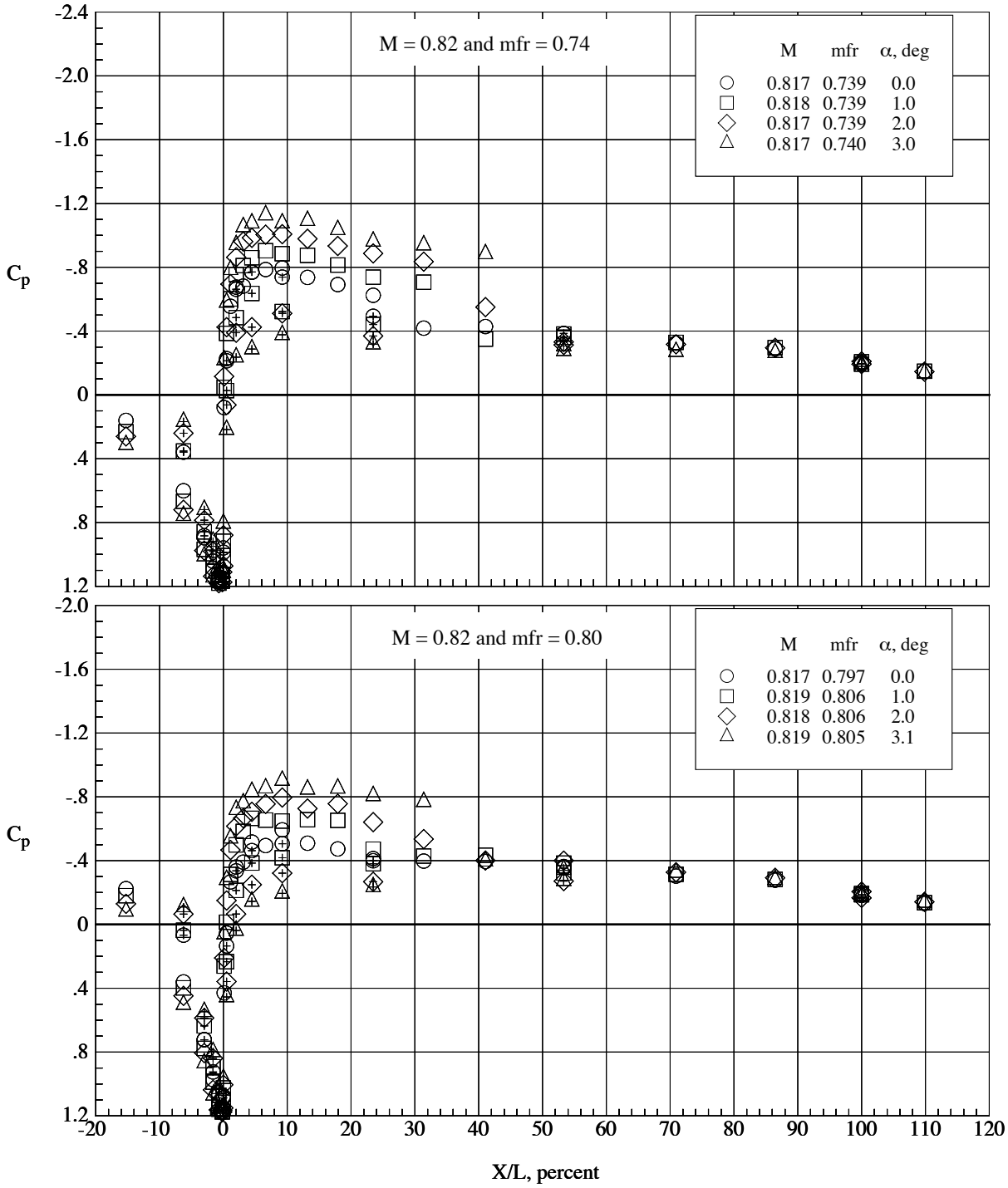
(c) M = 0.77.

Figure 12.- Continued.



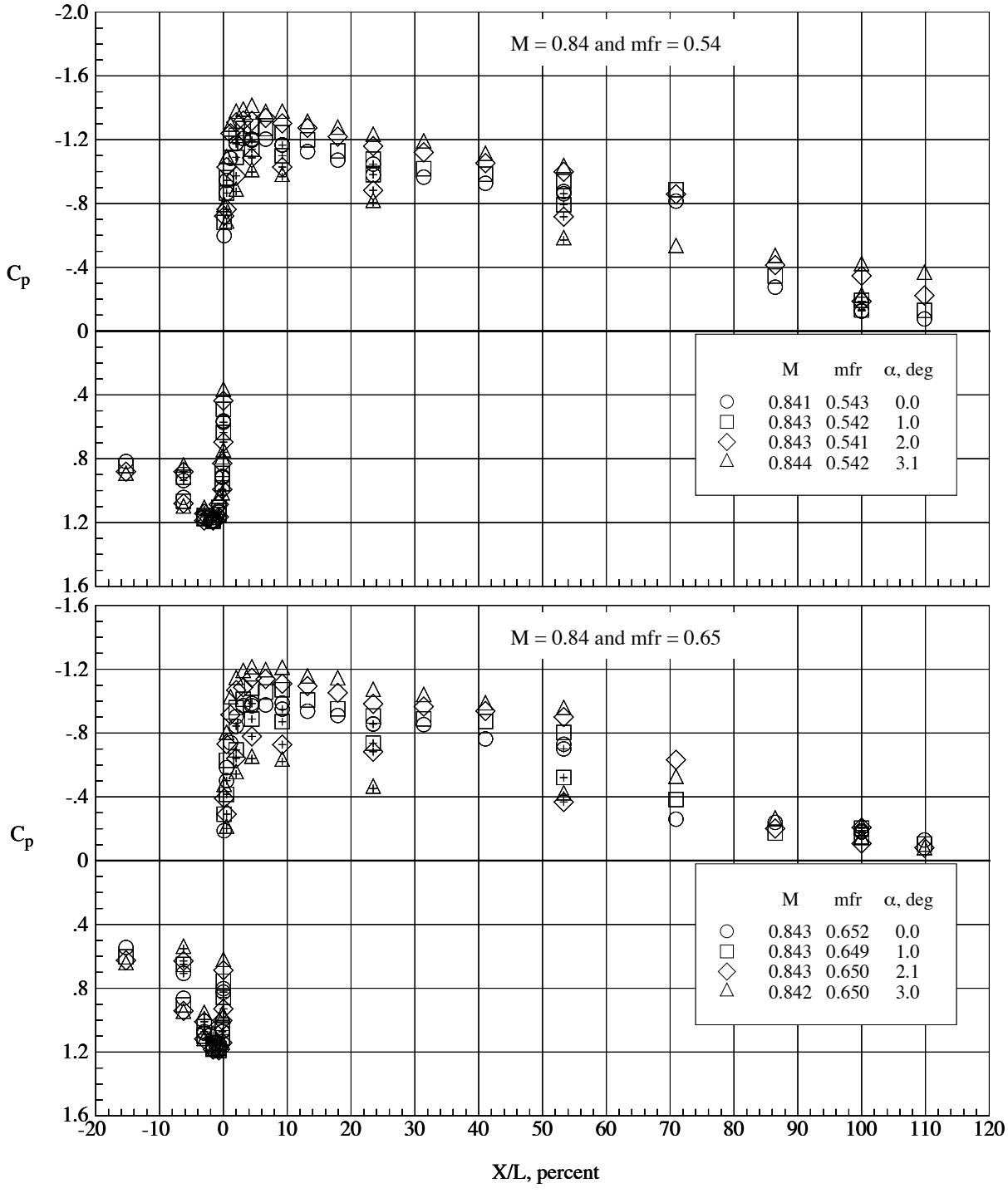
(d) M = 0.82.

Figure 12.- Continued.



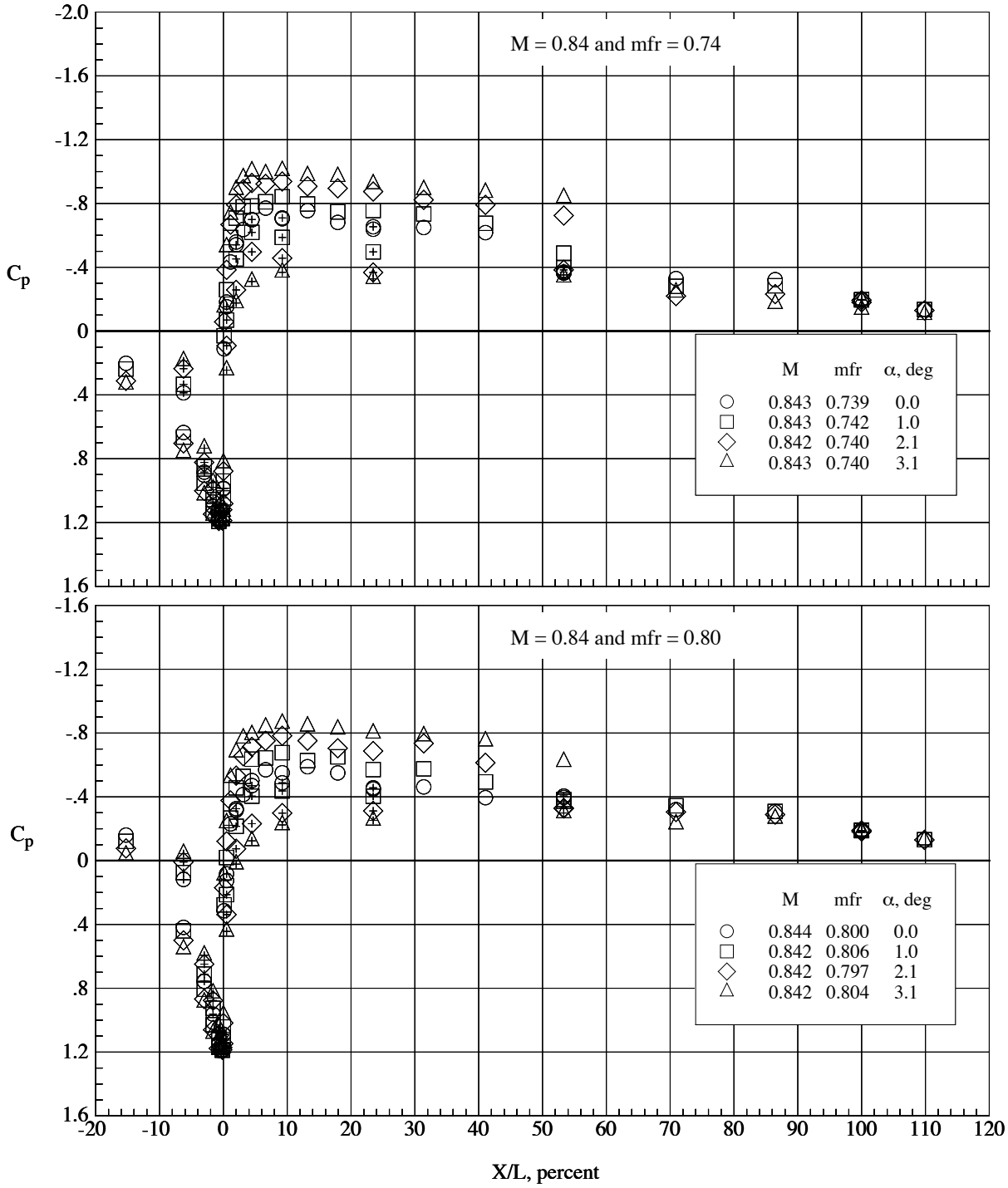
(e) M = 0.82.

Figure 12.- Continued.



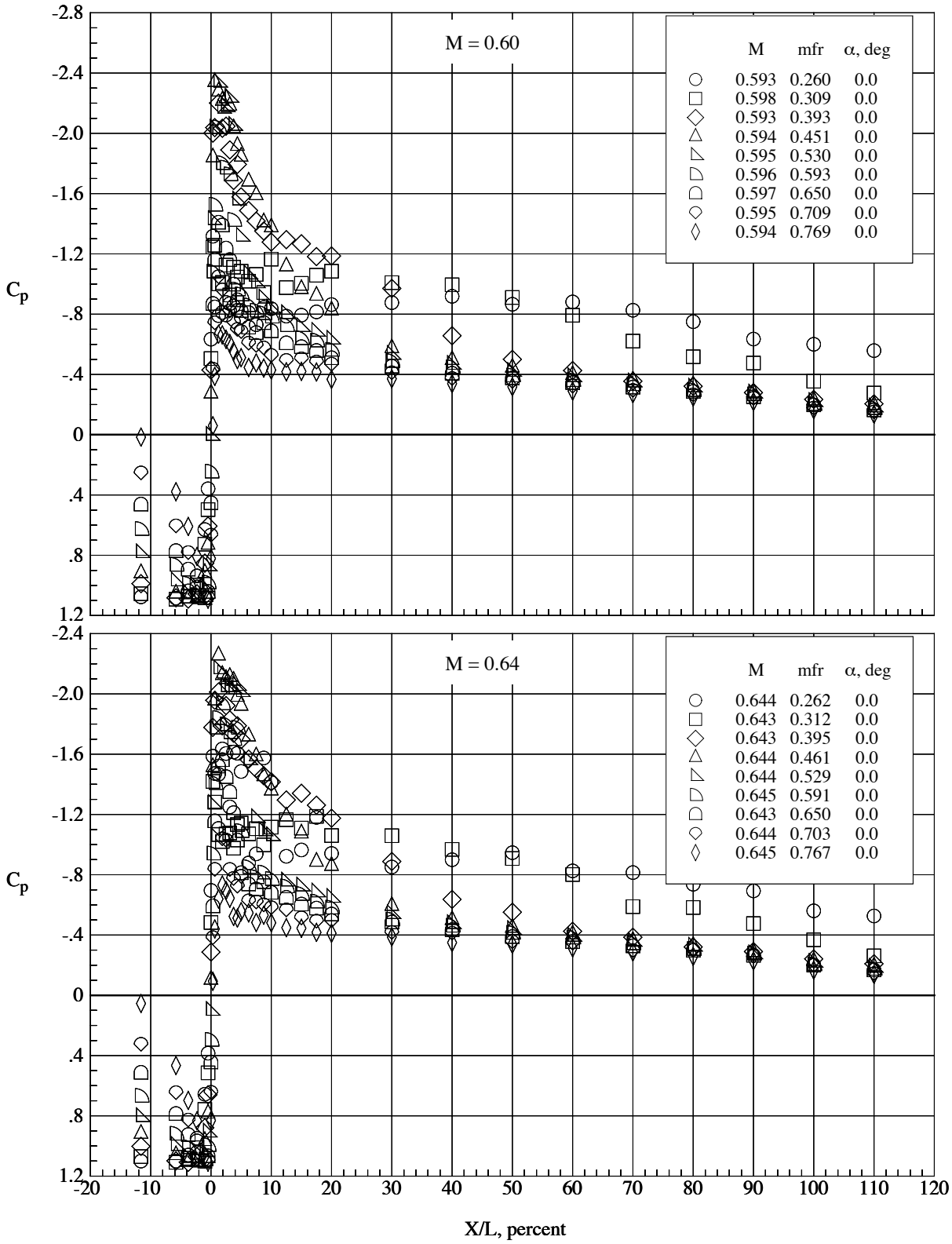
(f) M = 0.84.

Figure 12.- Continued.



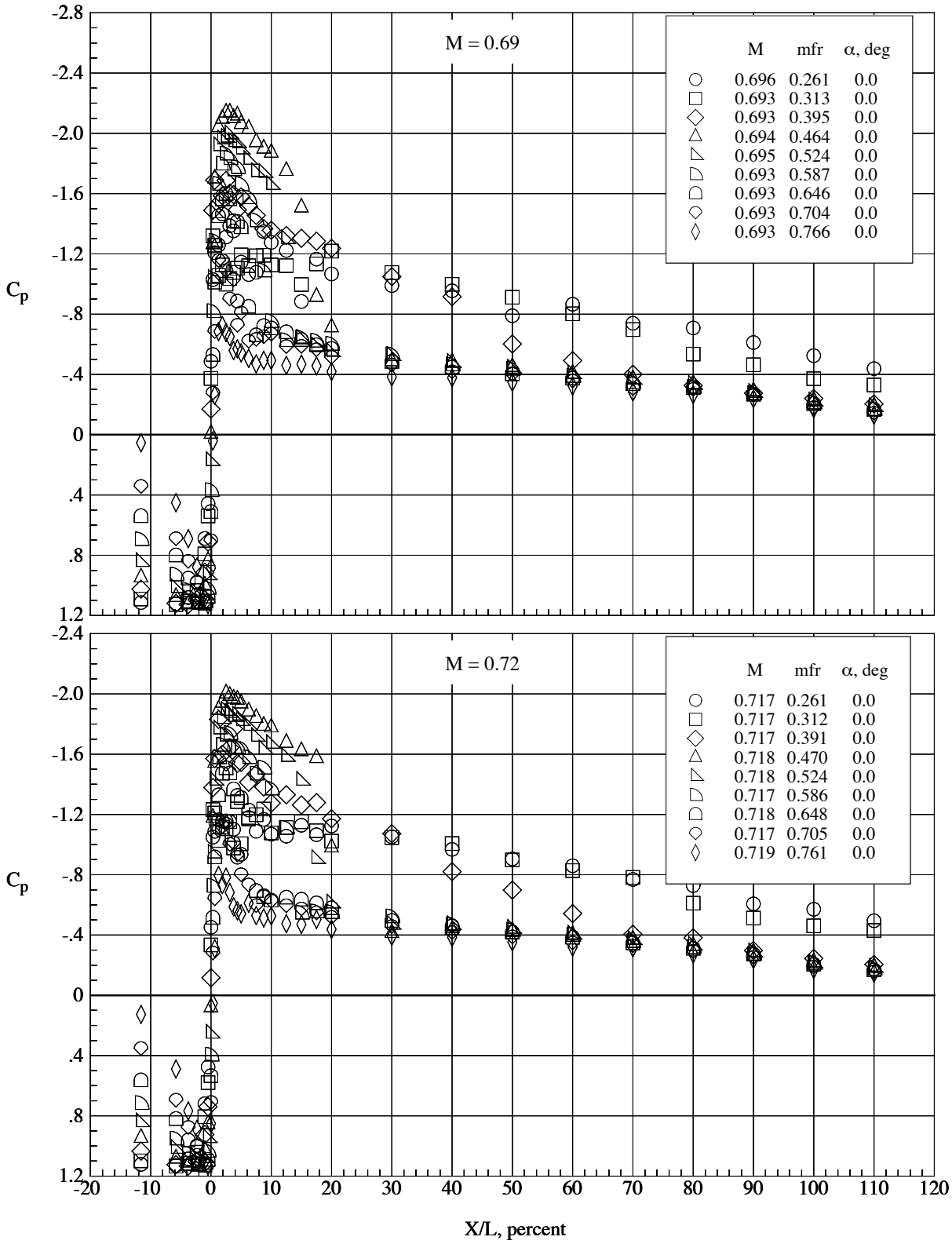
(g) M = 0.84.

Figure 12.- Concluded.



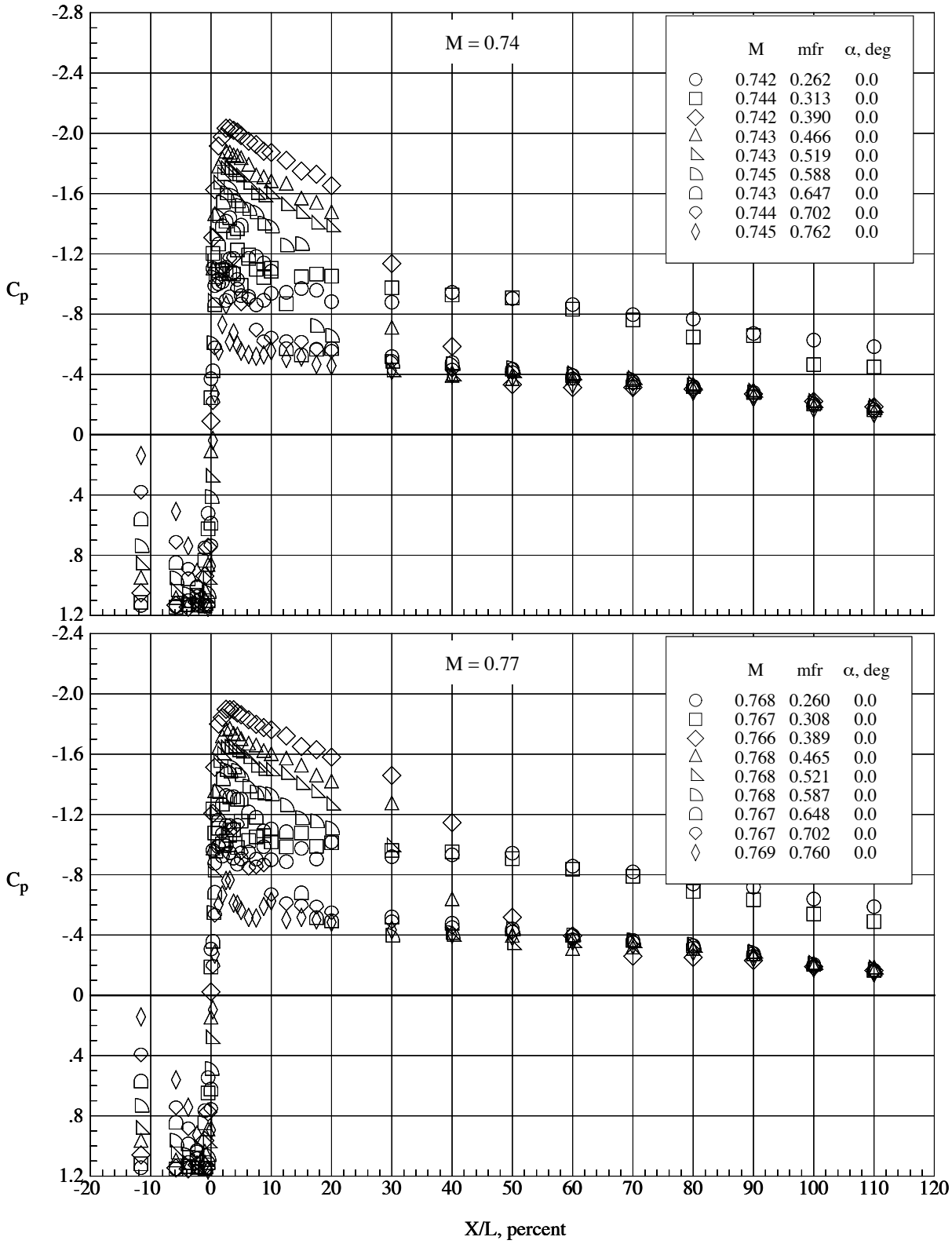
(a) M = 0.60 and 0.64.

Figure 13.- Pressure coefficient variation with X/L for Cowl F for several mass-flow ratios at $\alpha = 0°$.



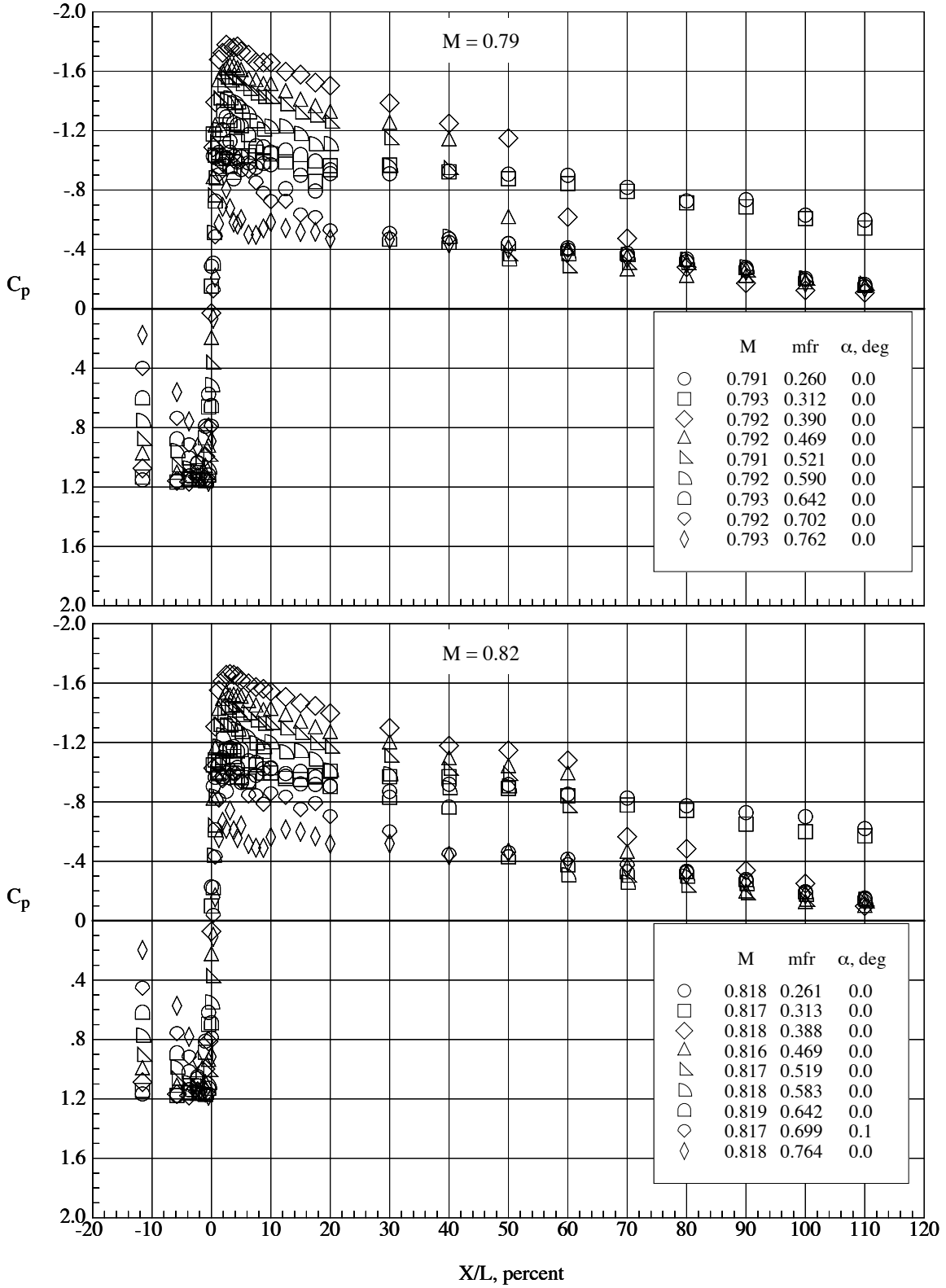
(b) M = 0.69 and 0.72.

Figure 13.- Continued.



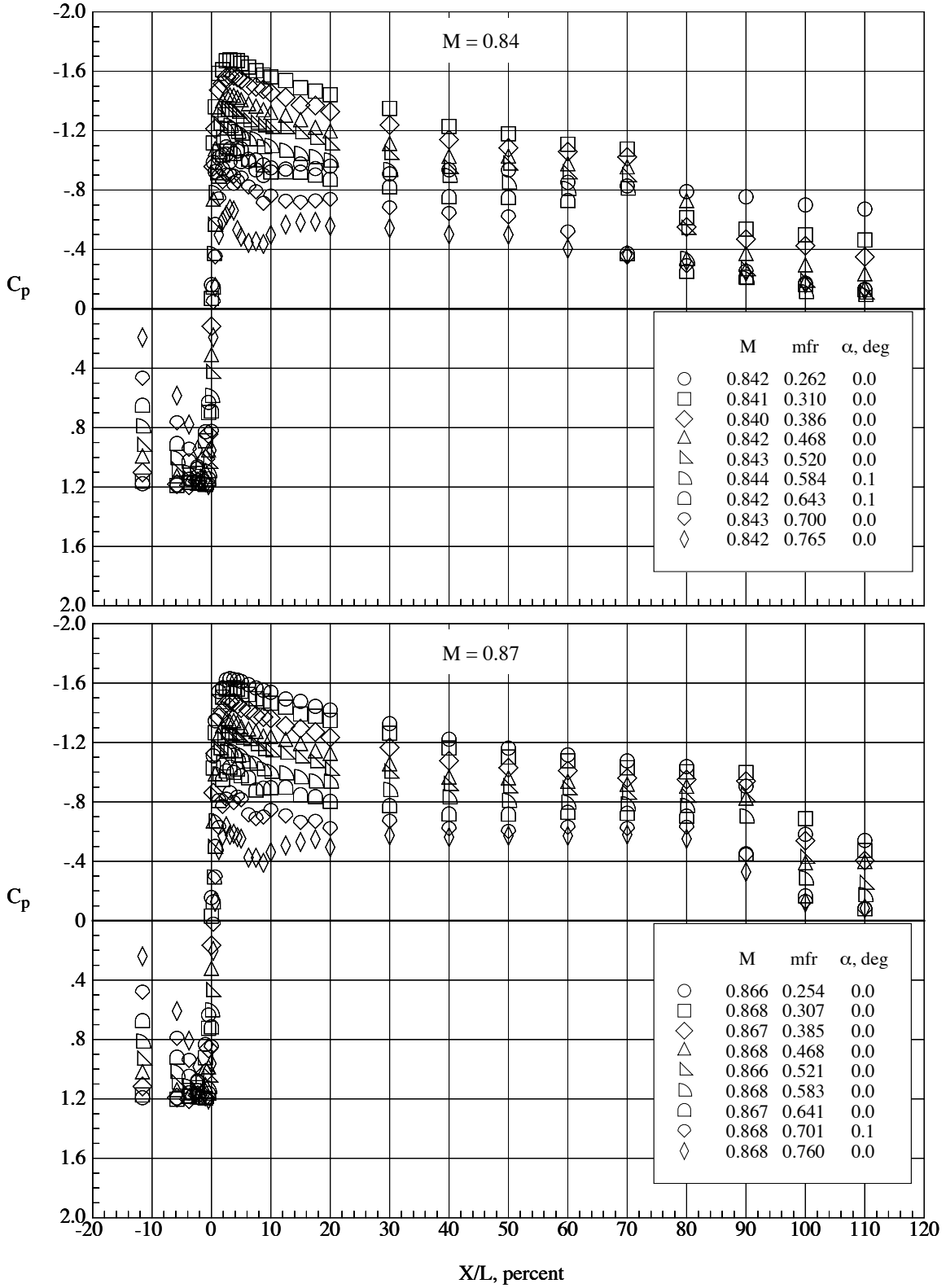
(c) M = 0.74 and 0.77.

Figure 13.- Continued.



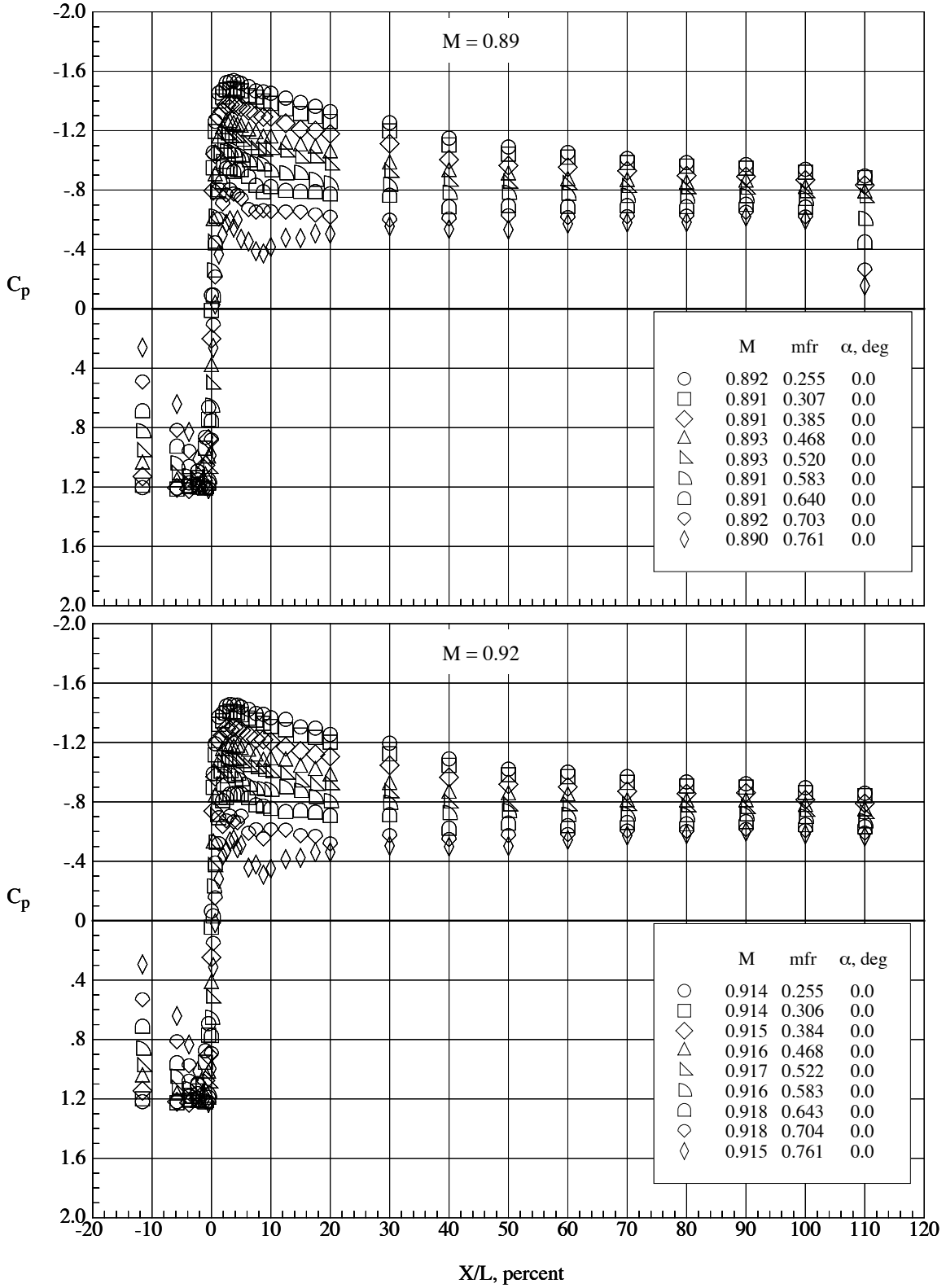
(d) M = 0.79 and 0.82.

Figure 13.- Continued.



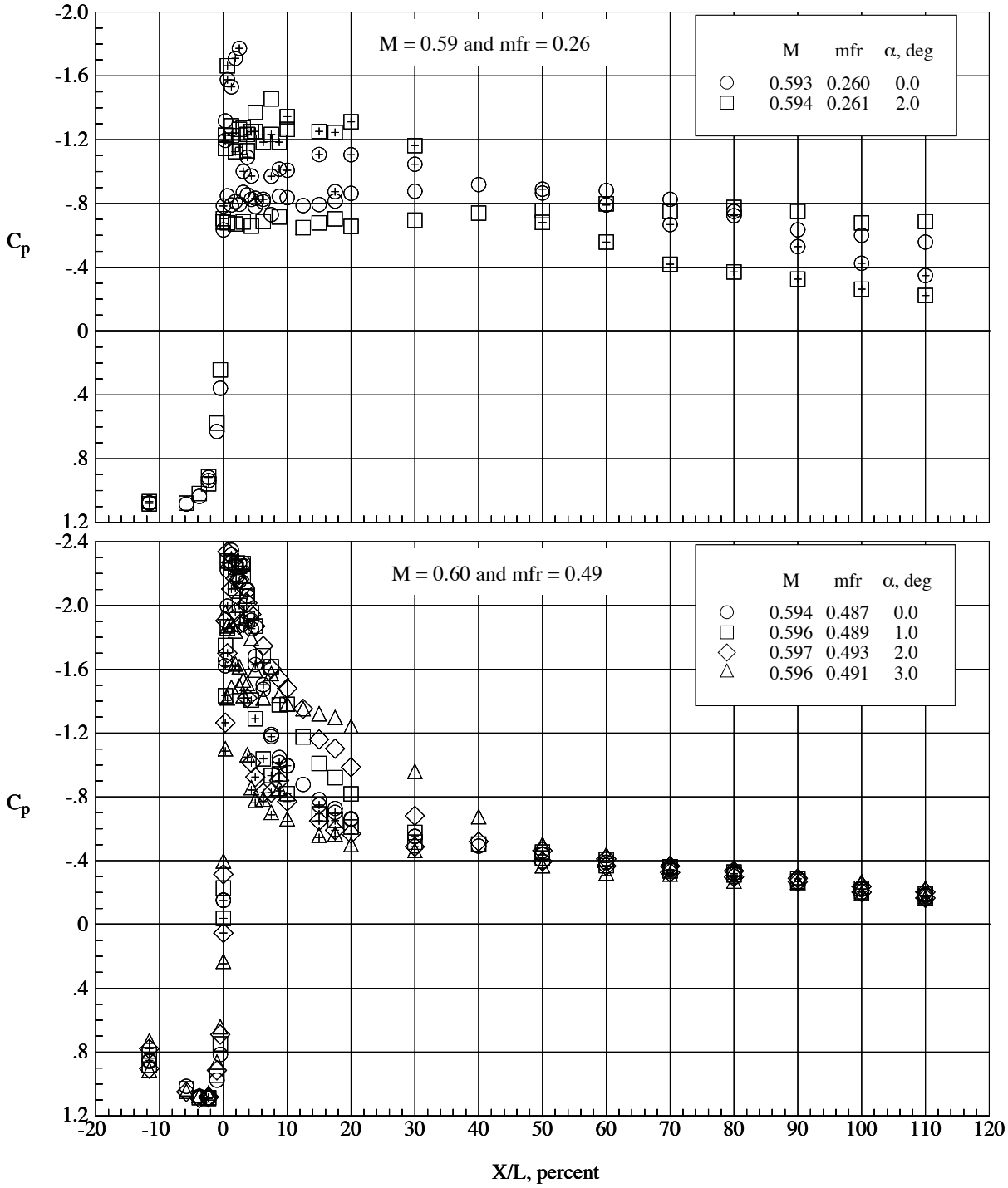
(e) M = 0.84 and 0.87.

Figure 13.- Continued.



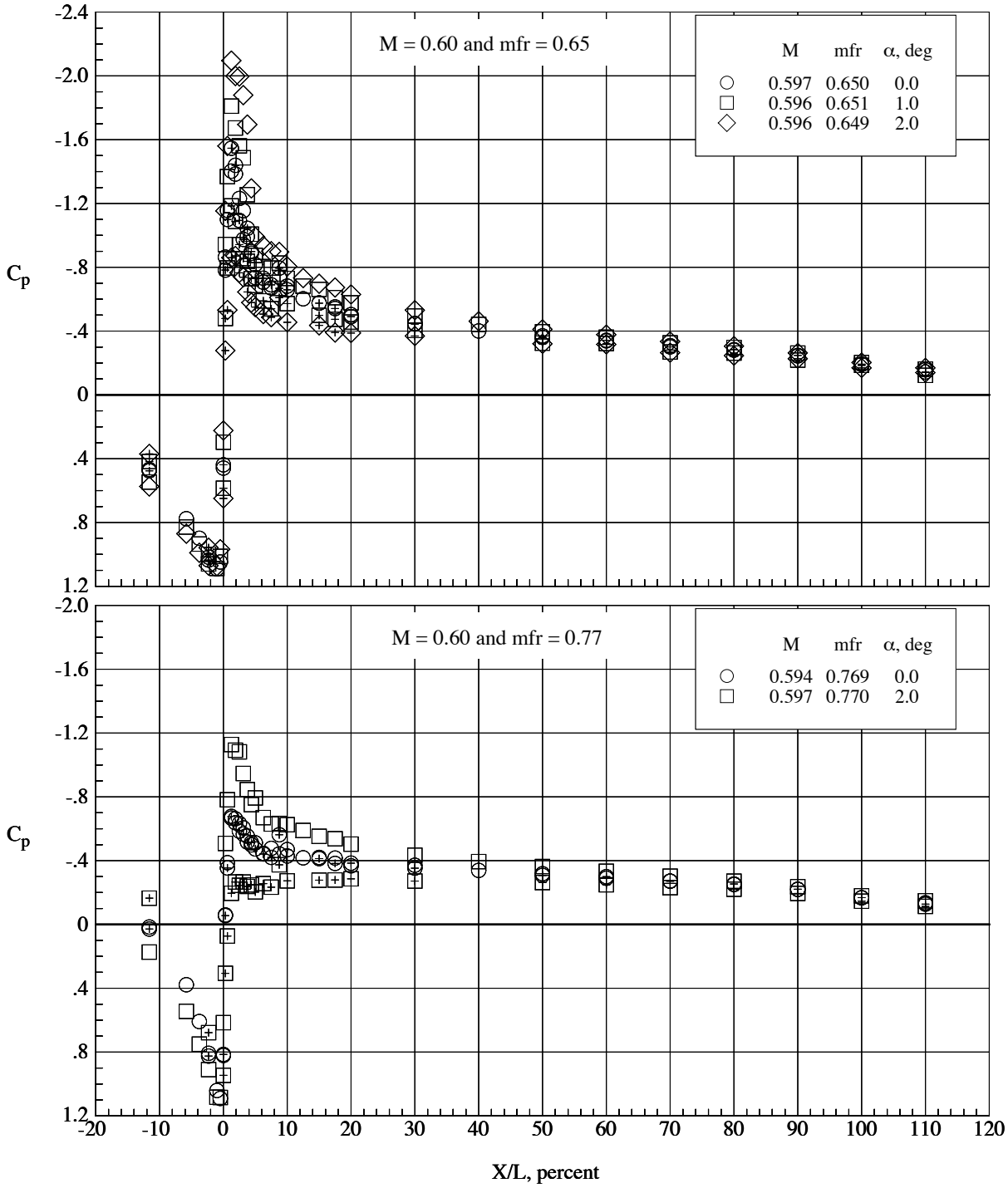
(f) M = 0.89 and 0.92.

Figure 13.- Concluded.



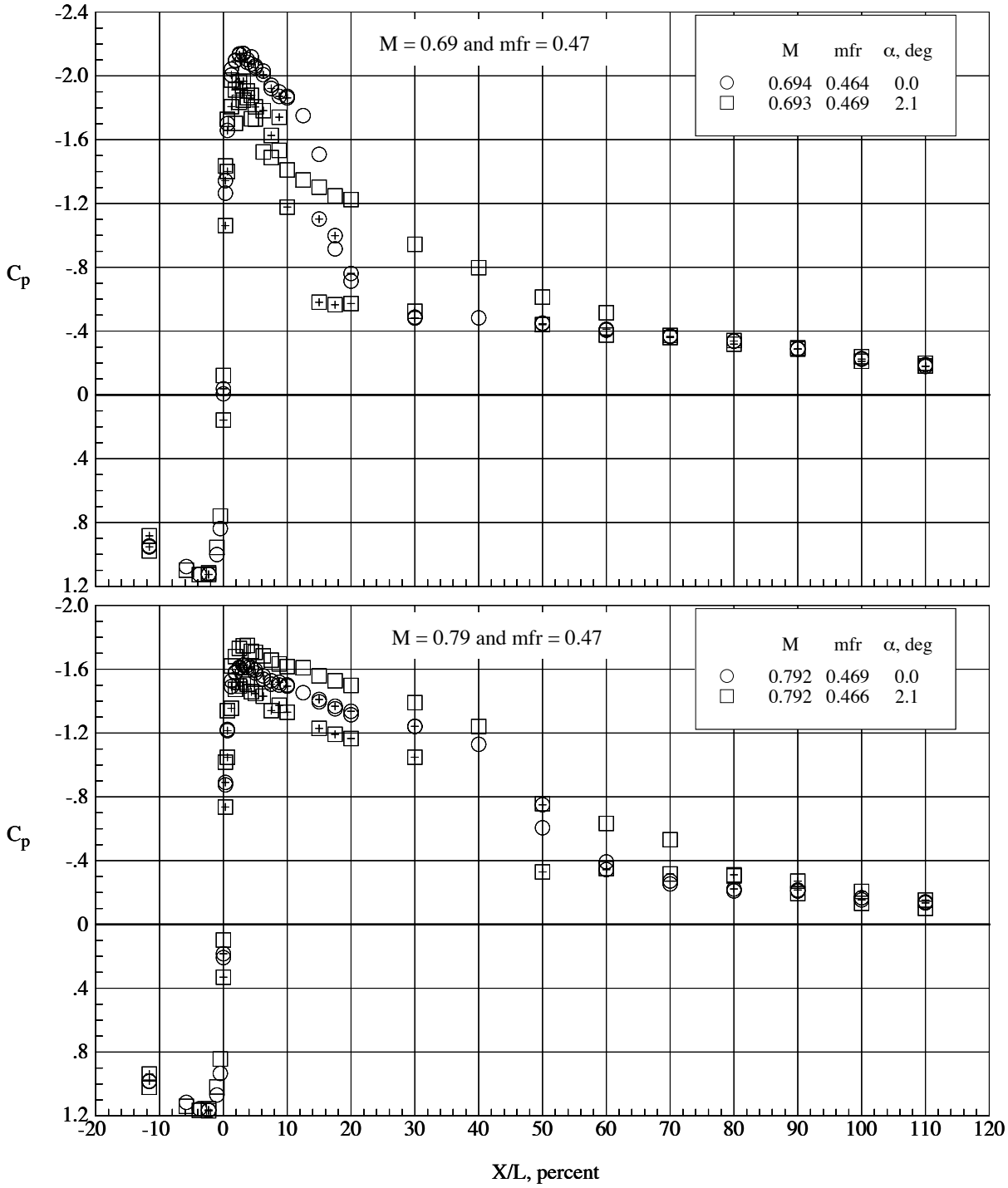
(a) M = 0.60.

Figure 14.- Pressure coefficient variation with X/L along the $\phi = 0°$ (plain symbols) and 180° (symbols with plus signs) meridians for Cowl F at various Mach numbers and mass-flow ratios at several angles of attack.



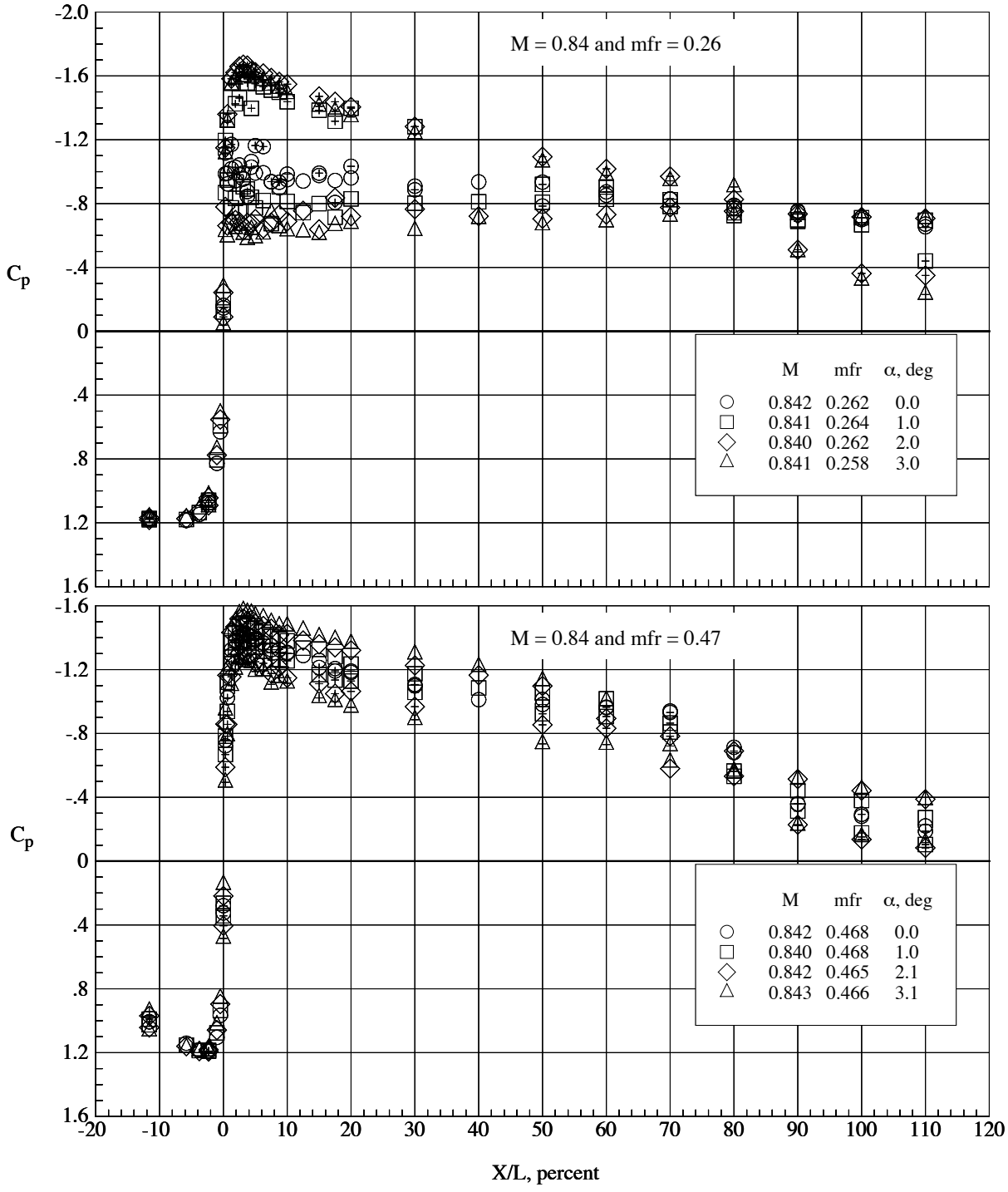
(b) M = 0.60.

Figure 14.- Continued.



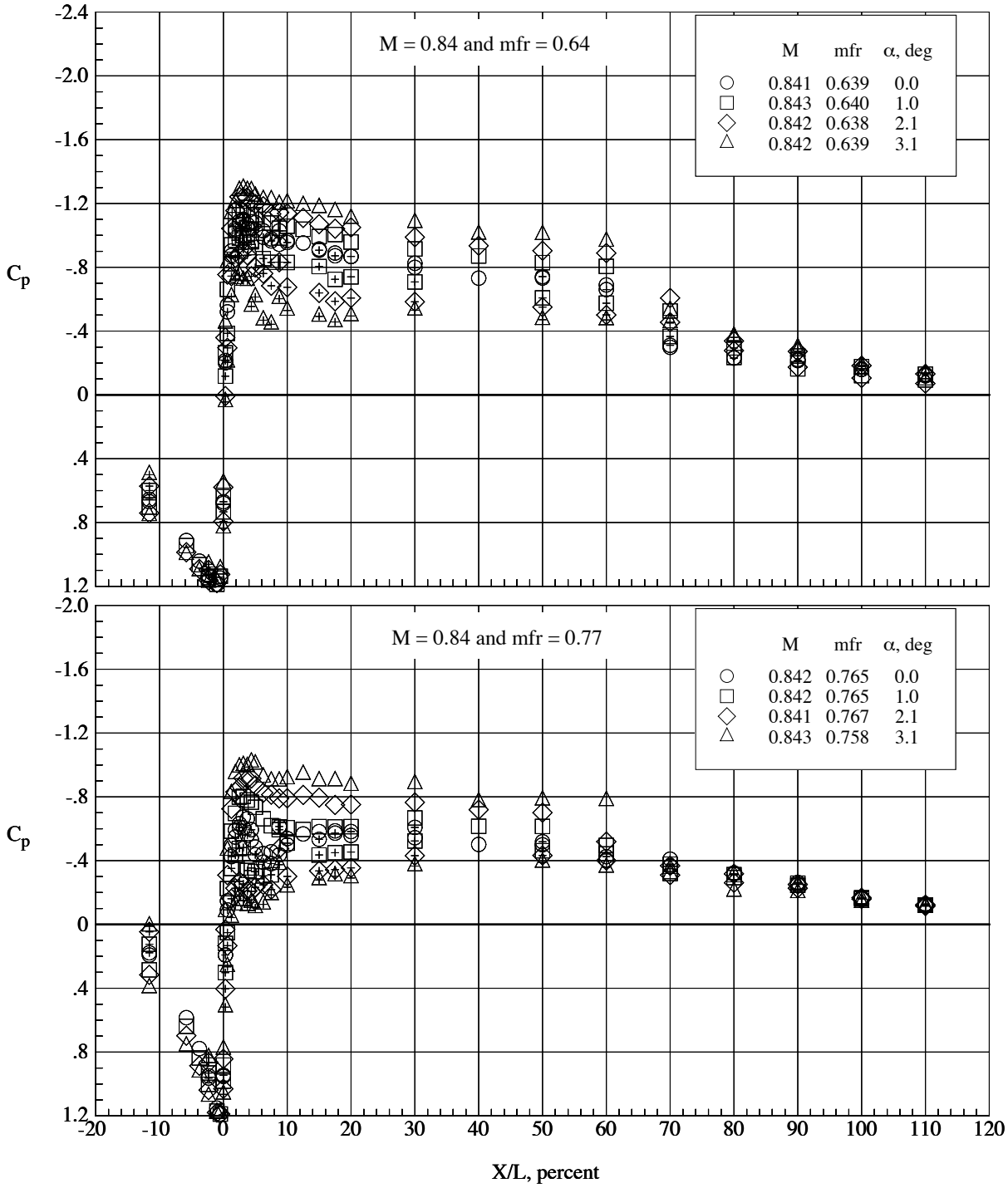
(c) M = 0.69 and 0.79.

Figure 14.- Continued.



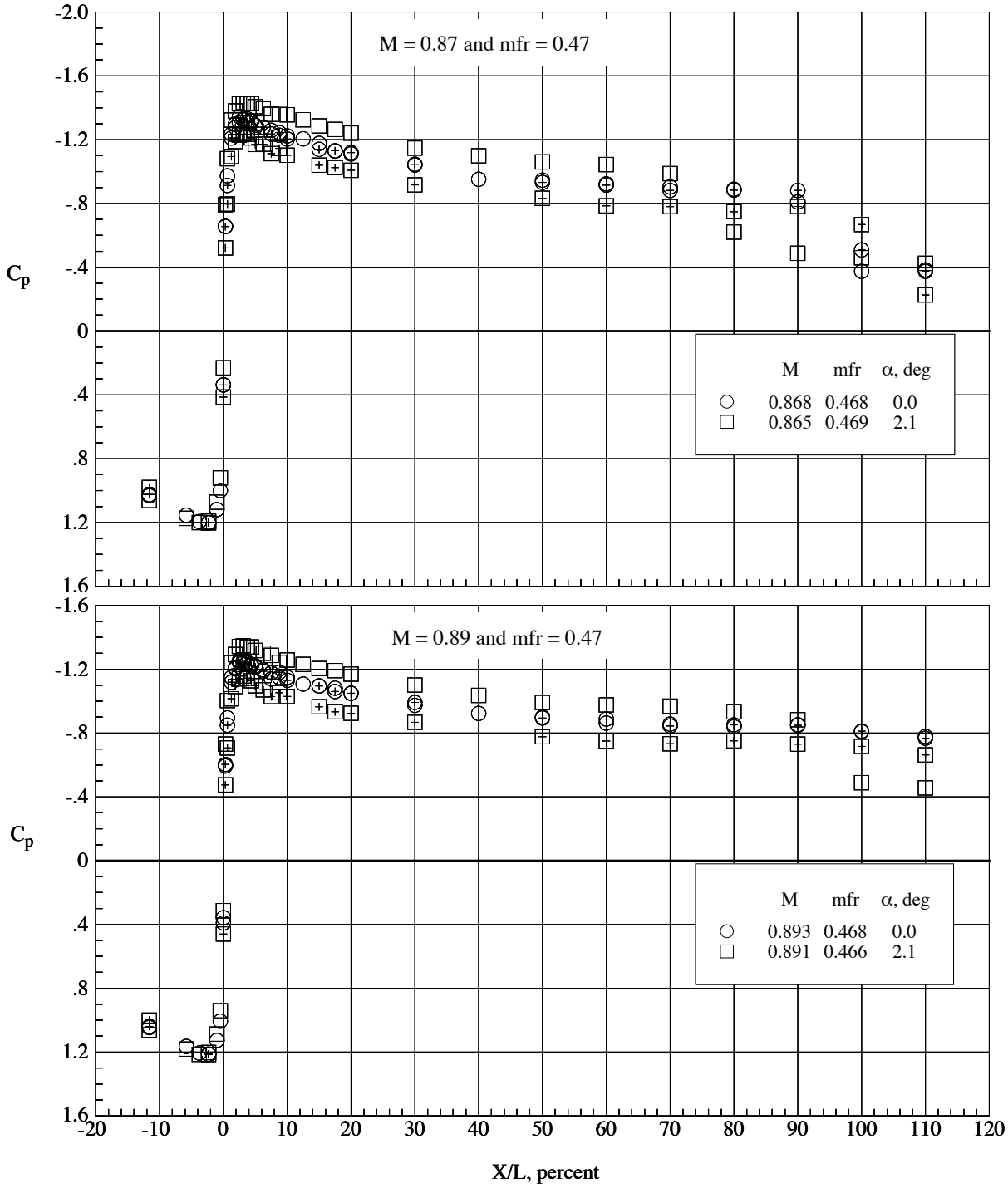
(d) M = 0.84.

Figure 14.- Continued.



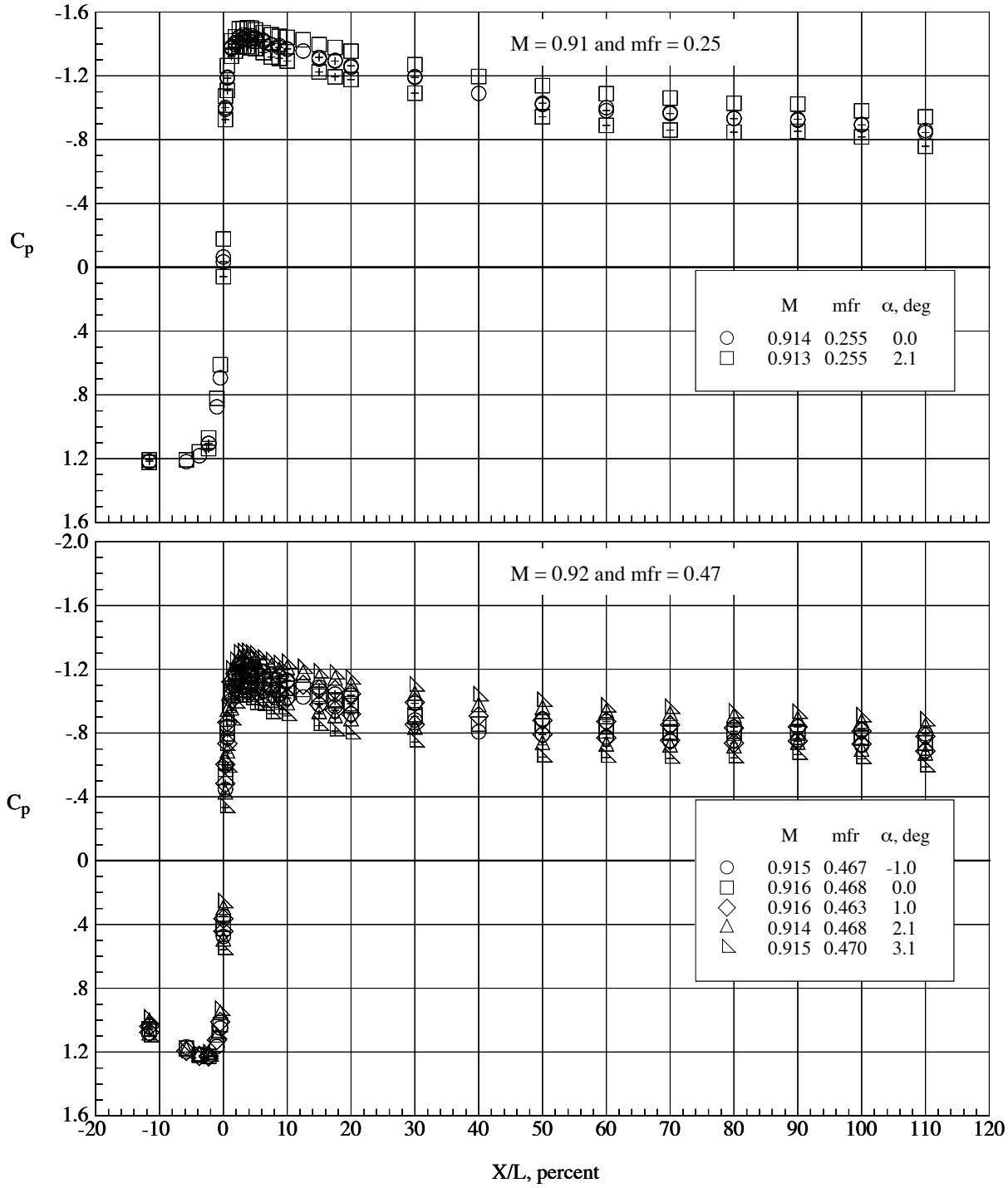
(e) M = 0.84.

Figure 14.- Continued.



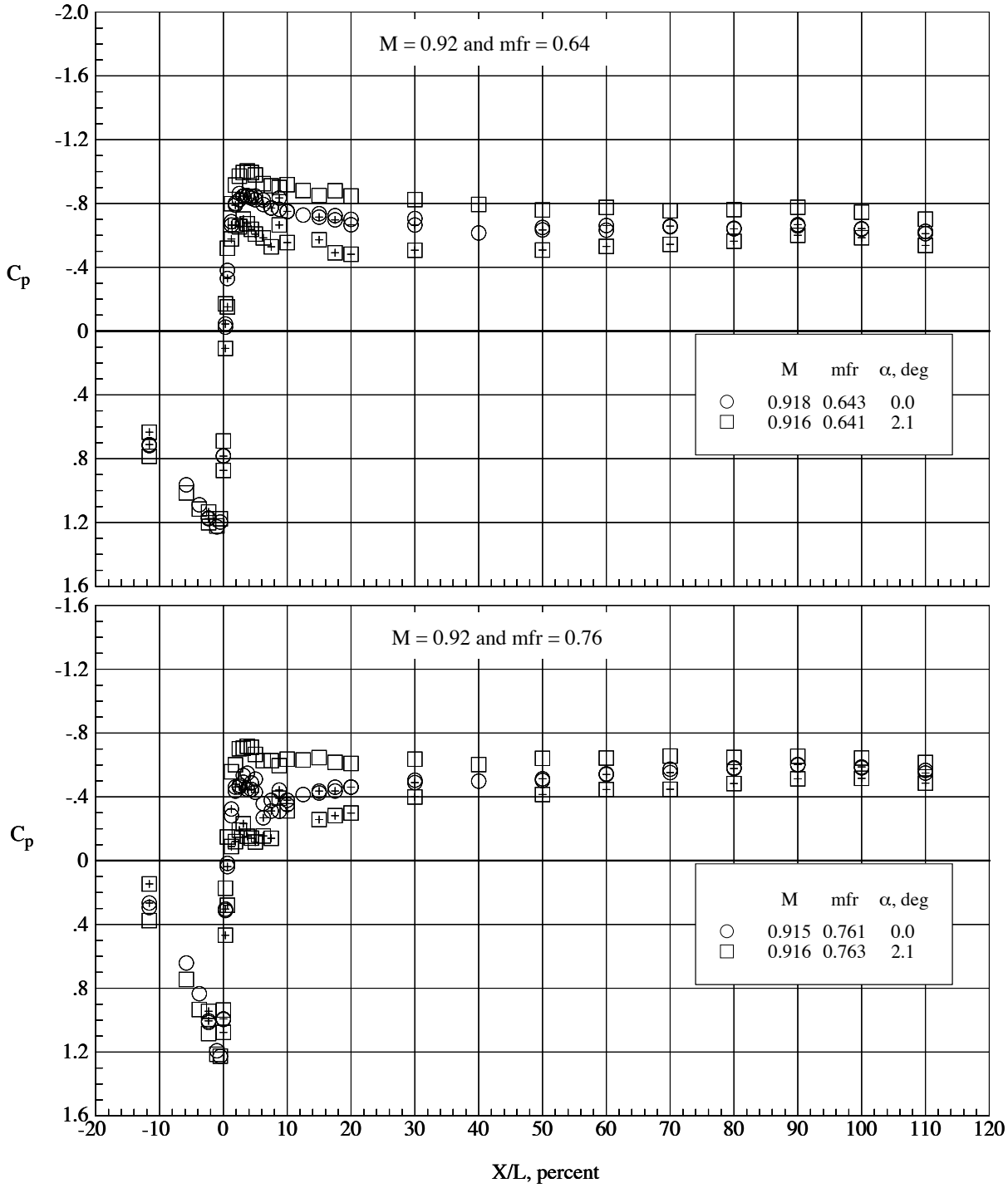
(f) M = 0.87 and 0.89.

Figure 14.- Continued.



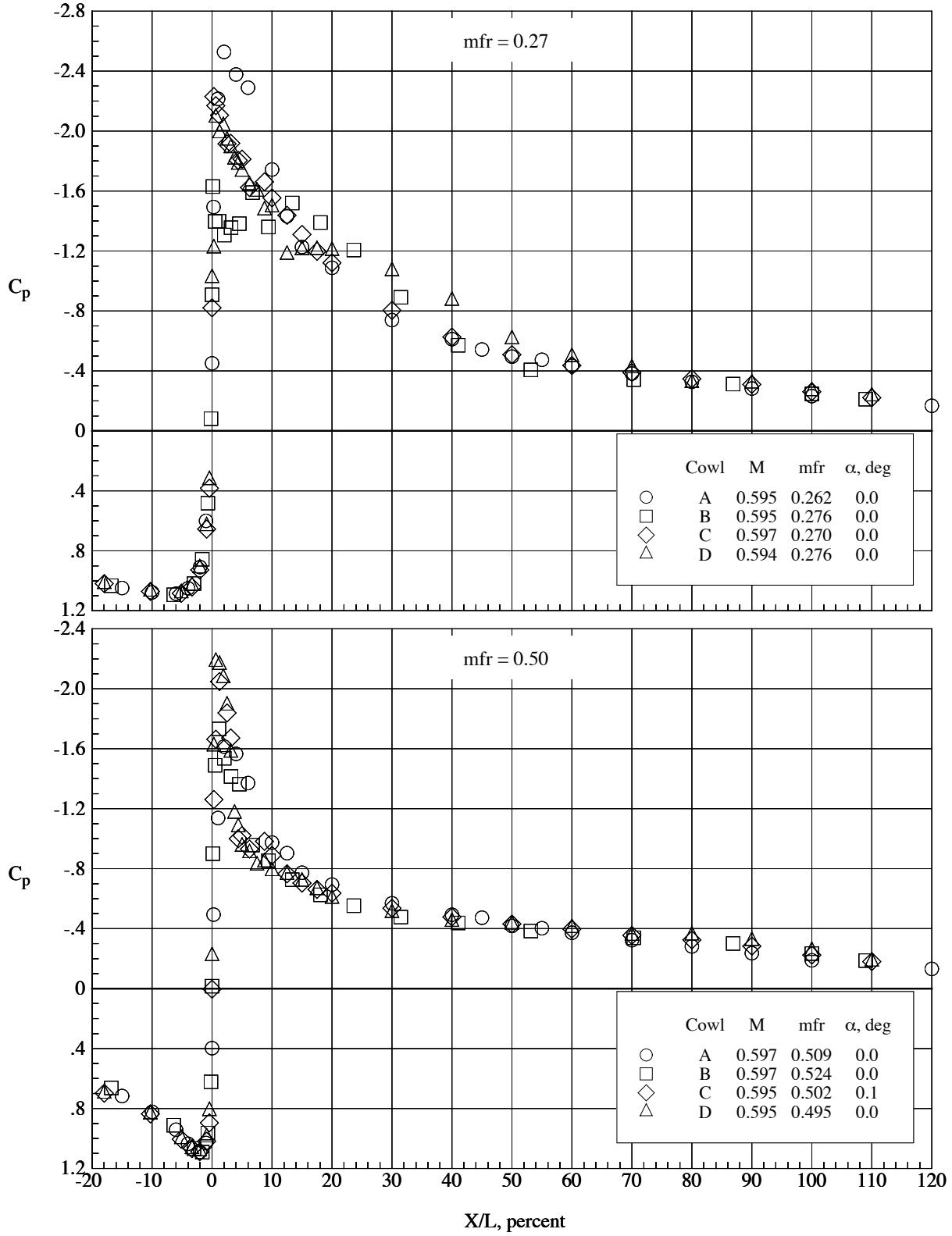
(g) M = 0.91.

Figure 14.- Continued.



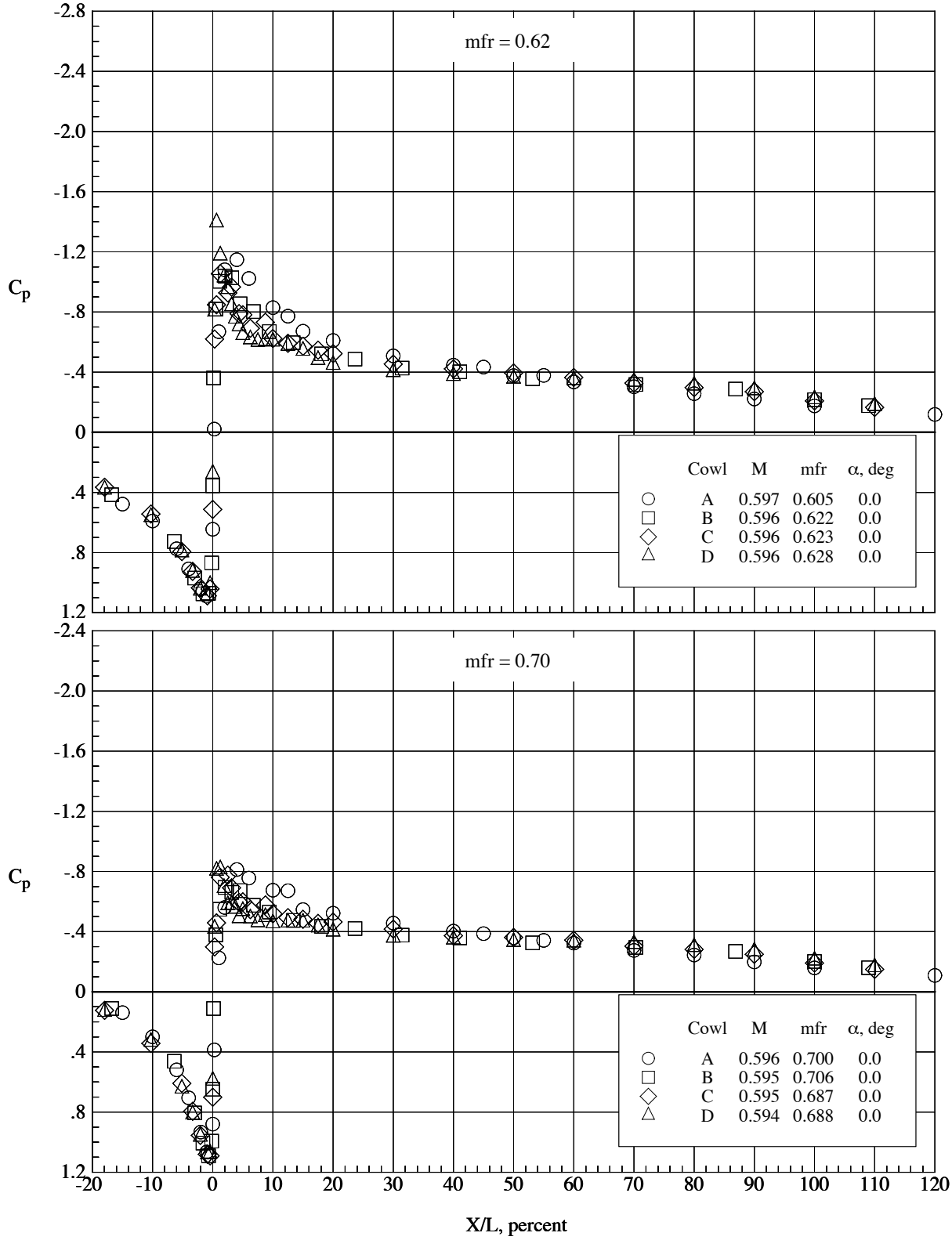
(h) M = 0.92.

Figure 14.- Concluded.



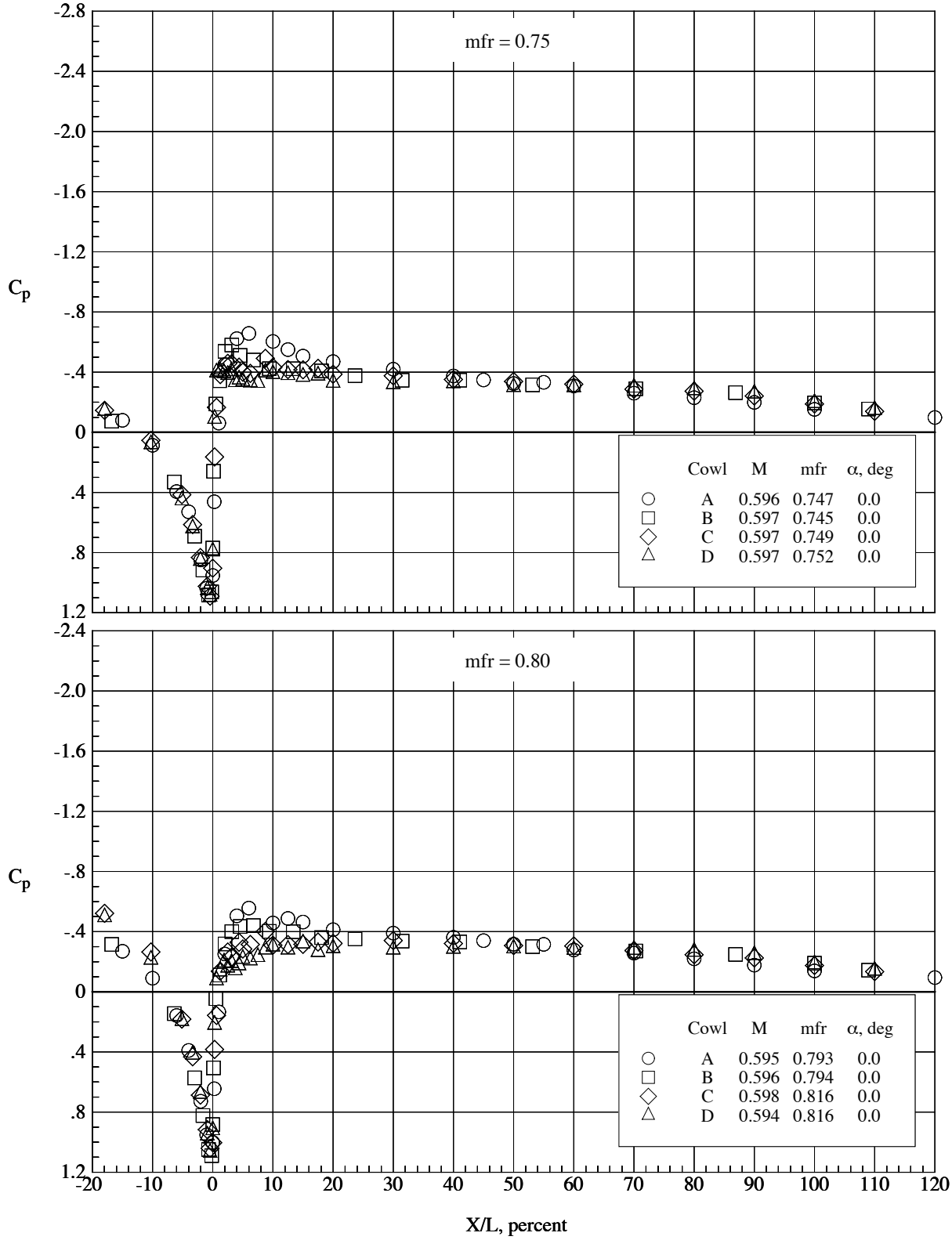
(a) mfr = 0.27 and 0.50.

Figure 15.- Comparison of pressure distributions at a Mach number of 0.60 for four cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



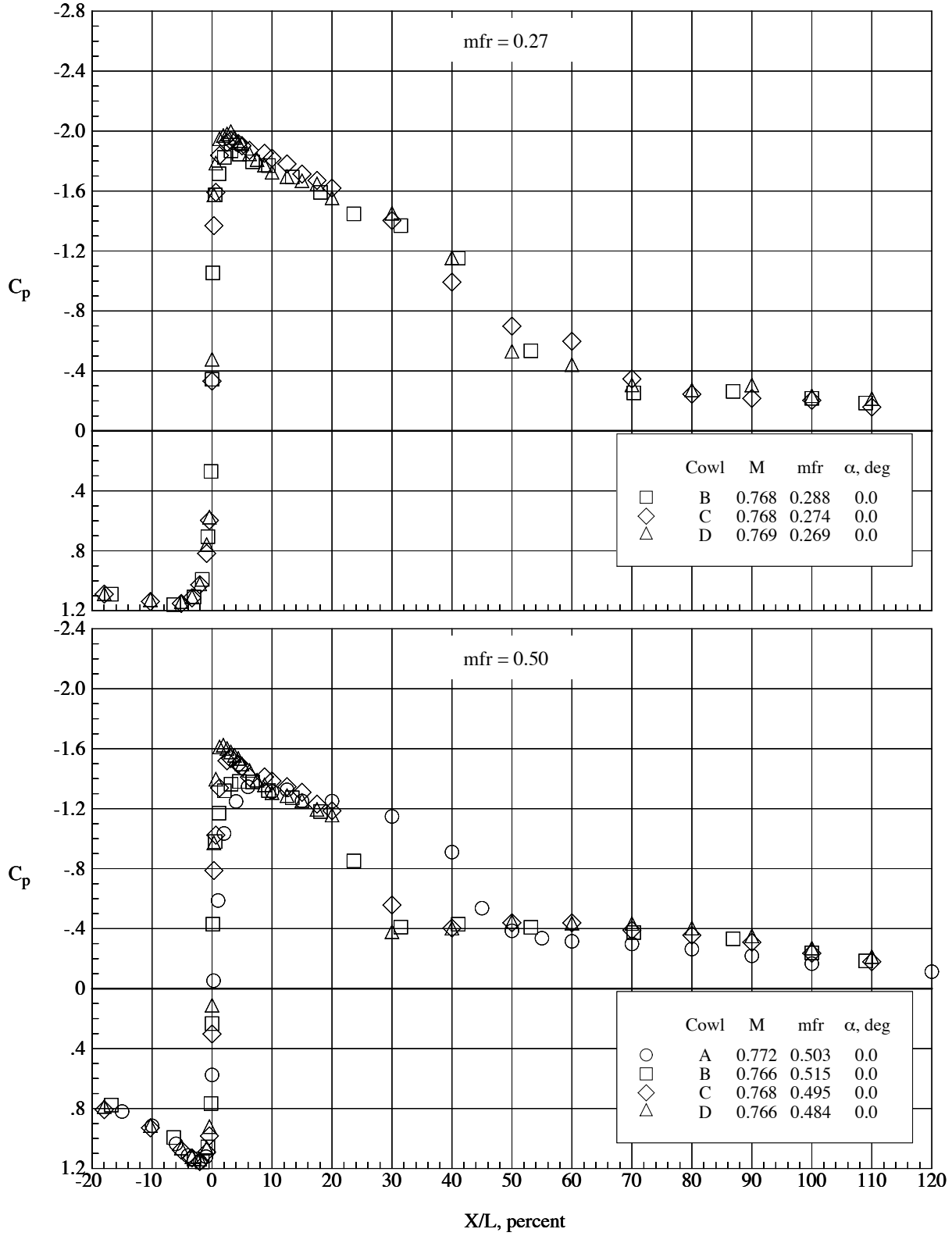
(b) mfr = 0.62 and 0.70.

Figure 15.- Continued.



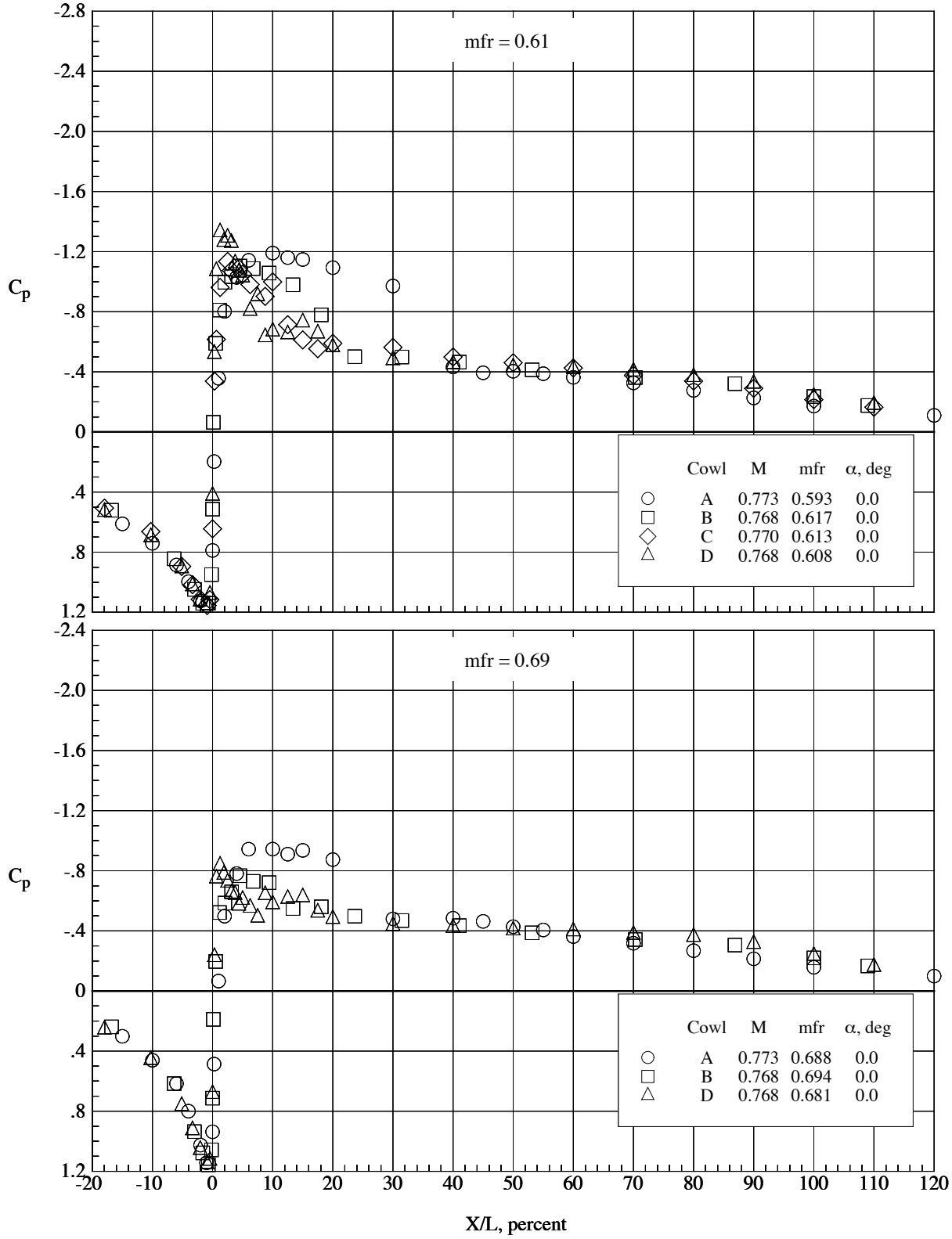
(c) mfr = 0.75 and 0.80.

Figure 15.- Concluded.



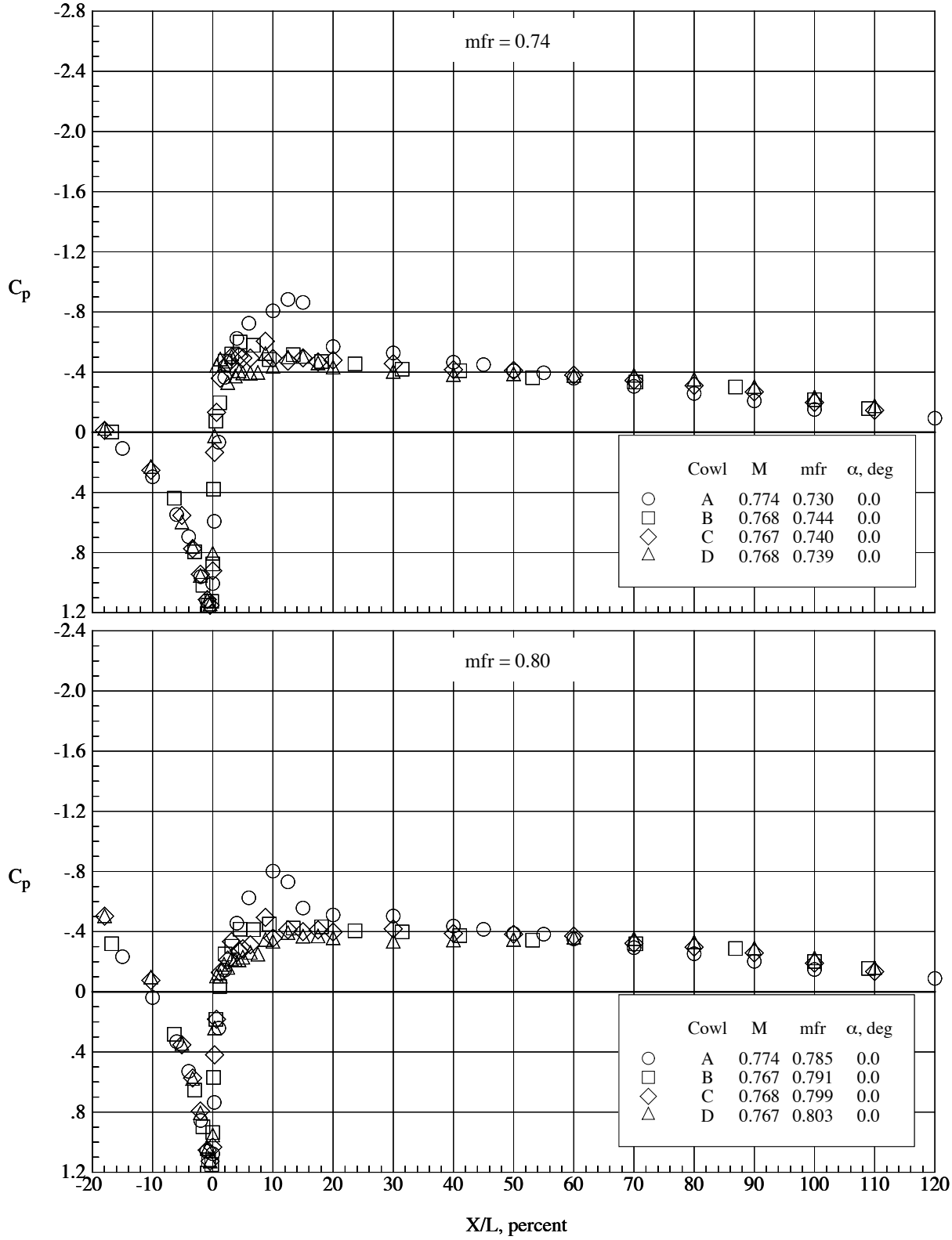
(a) mfr = 0.27 and 0.50.

Figure 16.- Comparison of pressure distributions at a Mach number of 0.77 for cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



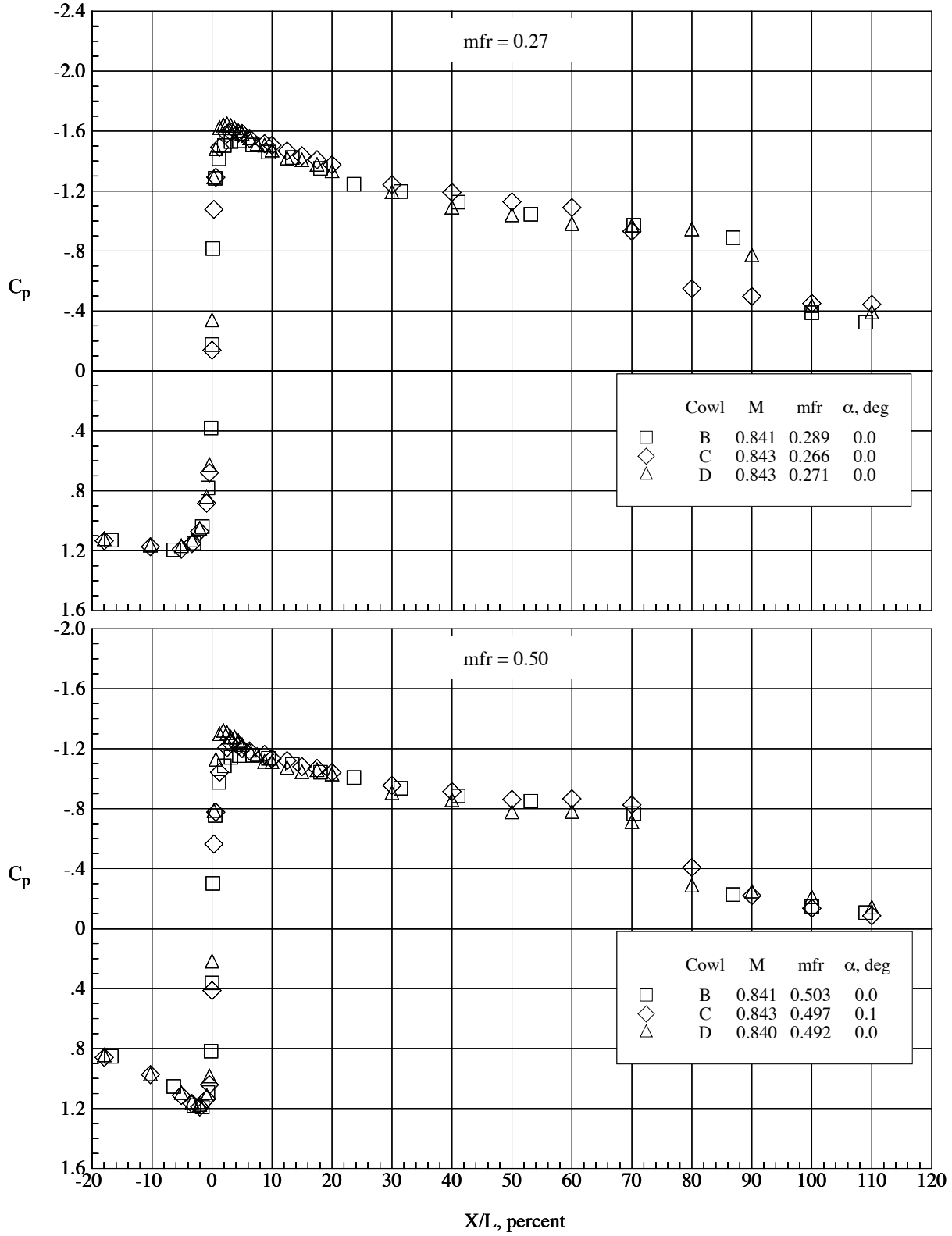
(b) mfr = 0.61 and 0.69.

Figure 16.- Continued.



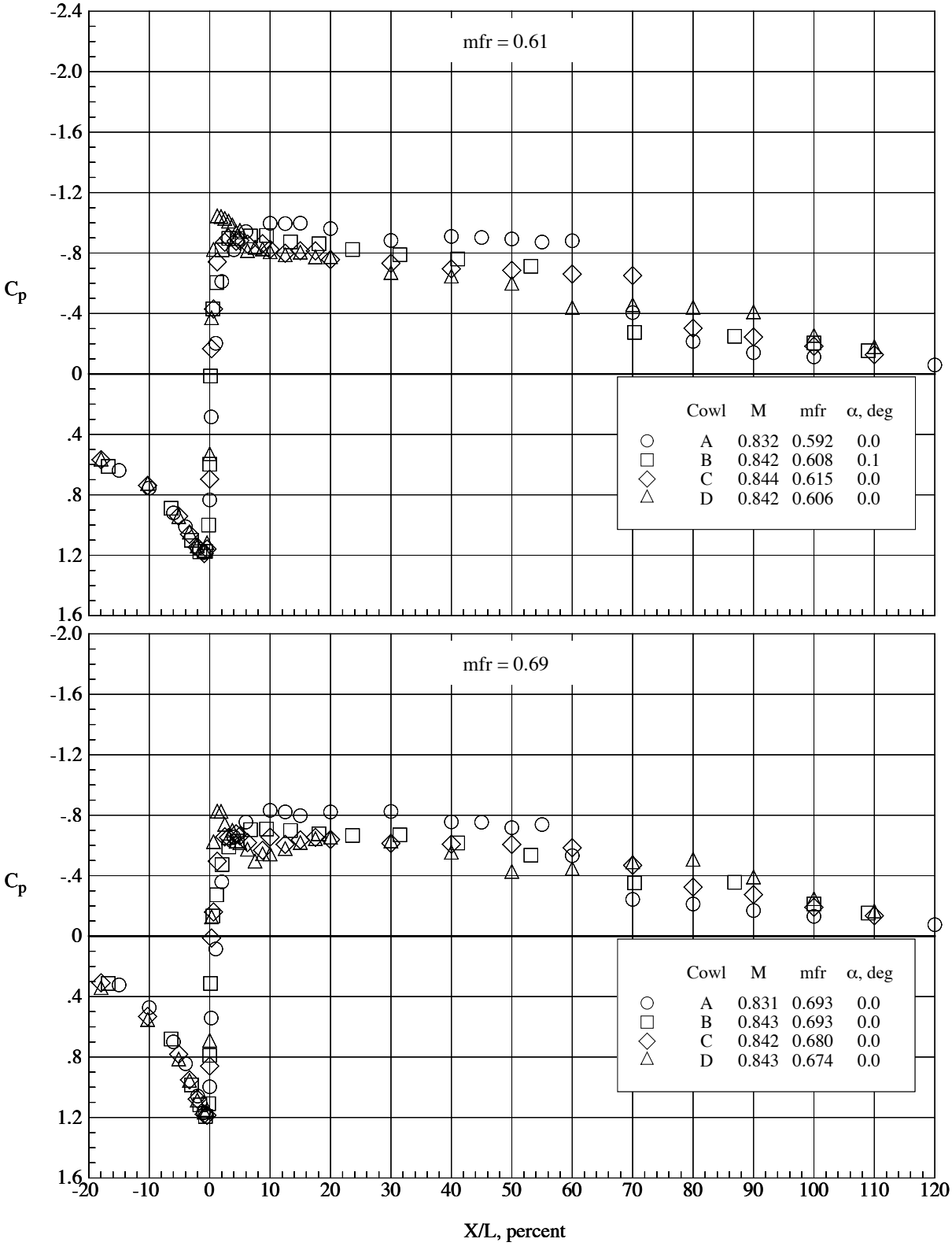
(c) mfr = 0.74 and 0.80.

Figure 16.- Concluded.



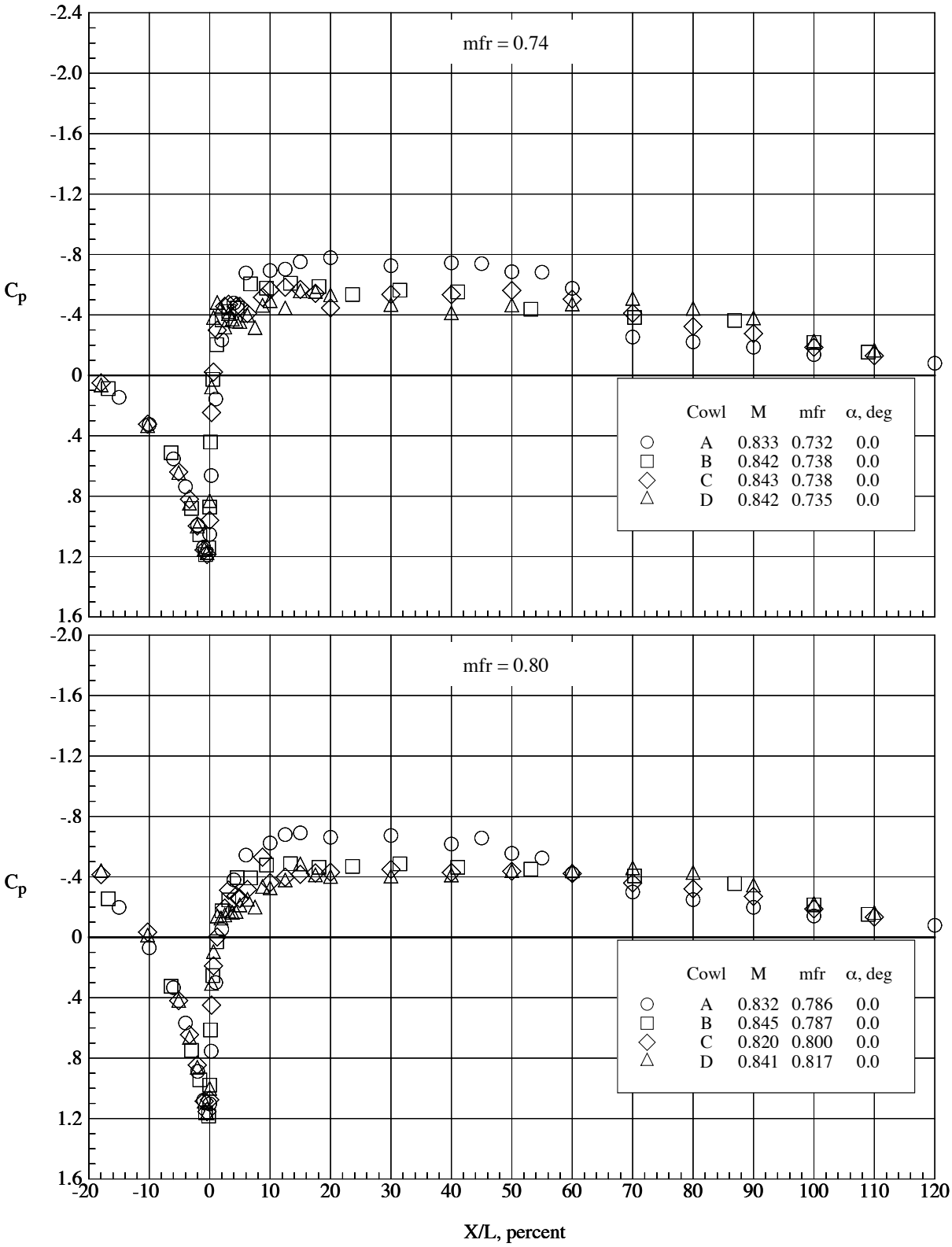
(a) mfr = 0.27 and 0.50.

Figure 17.- Comparison of pressure distributions at a Mach number of 0.84 for cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



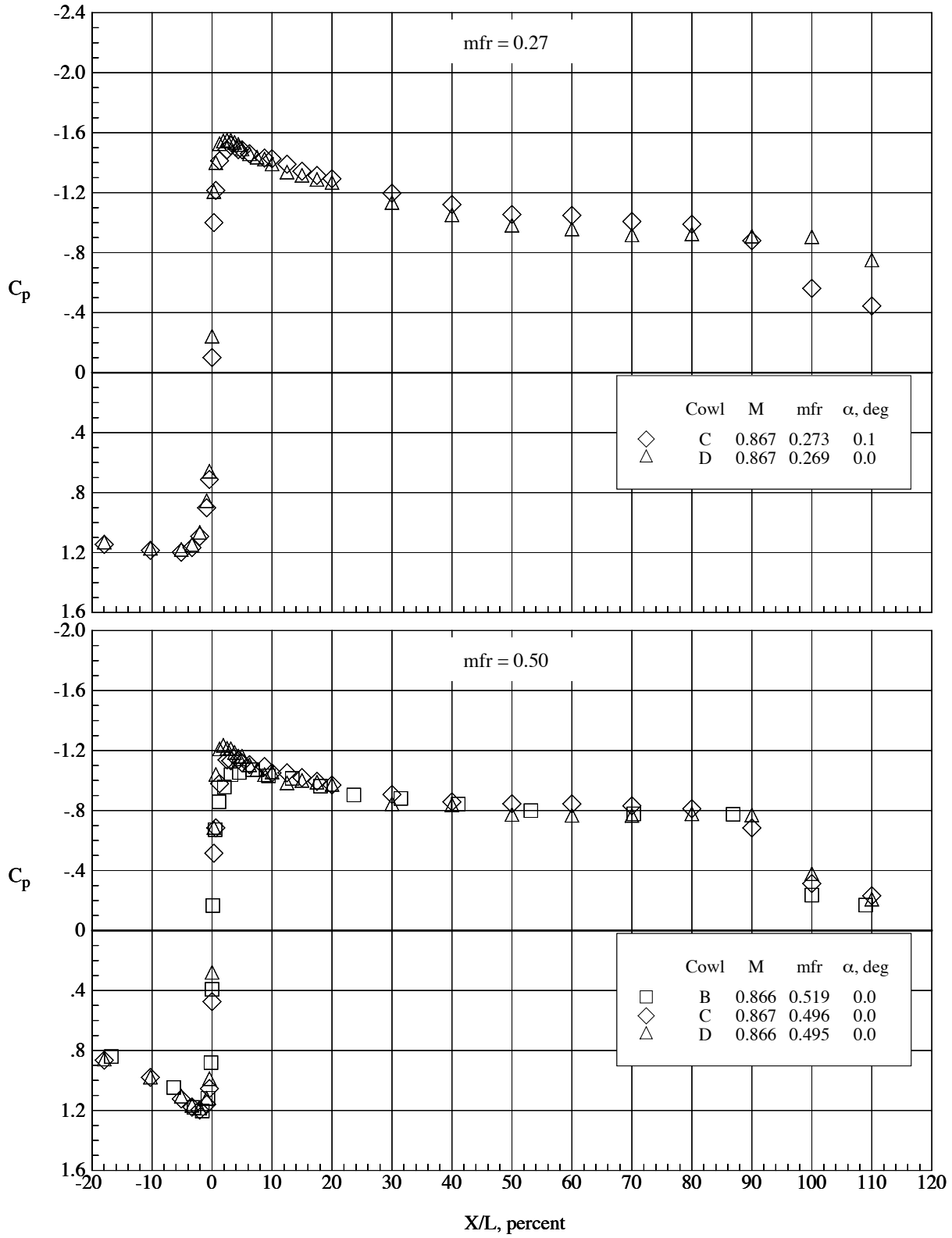
(b) mfr = 0.61 and 0.69.

Figure 17.- Continued.



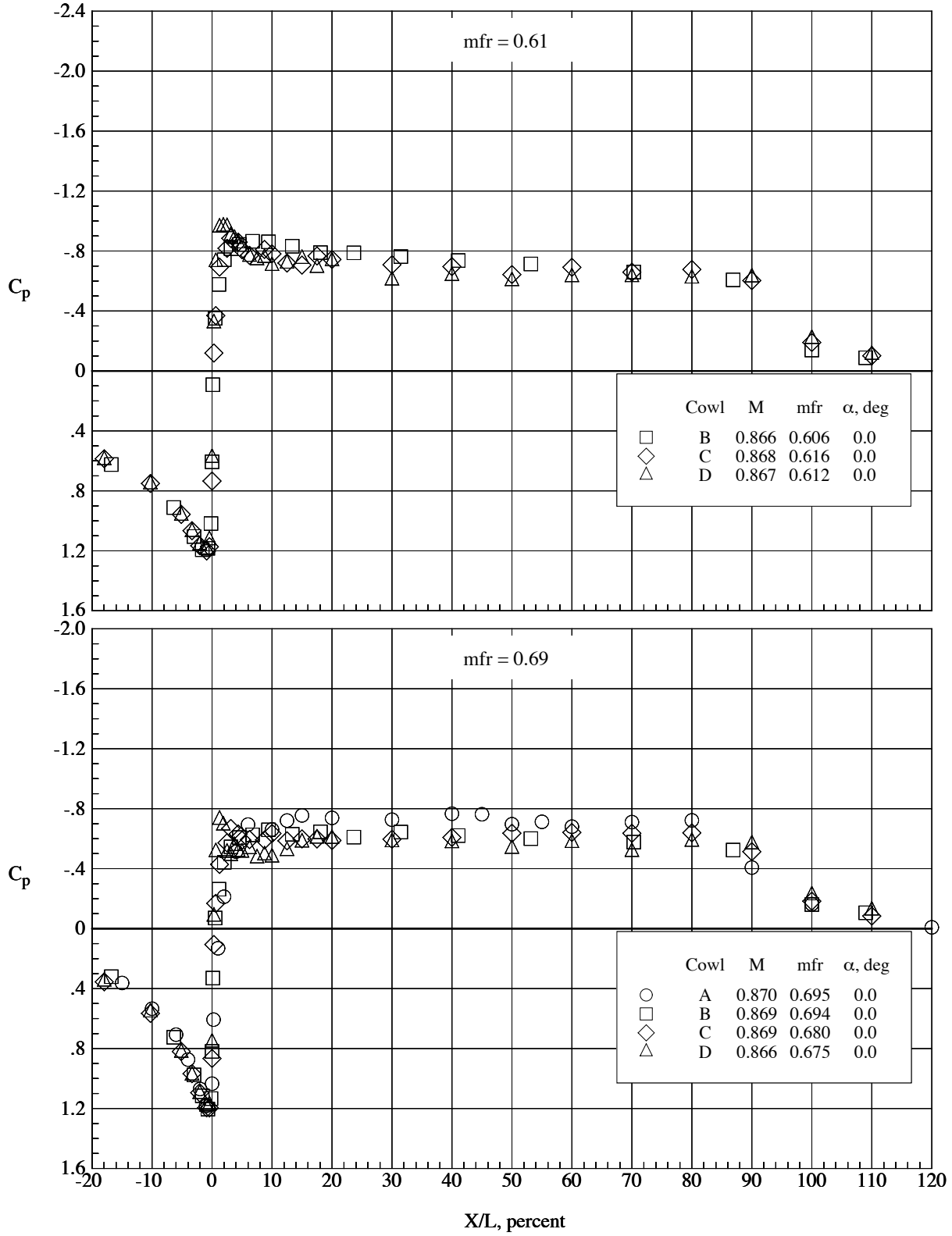
(c) mfr = 0.74 and 0.80.

Figure 17.- Concluded.



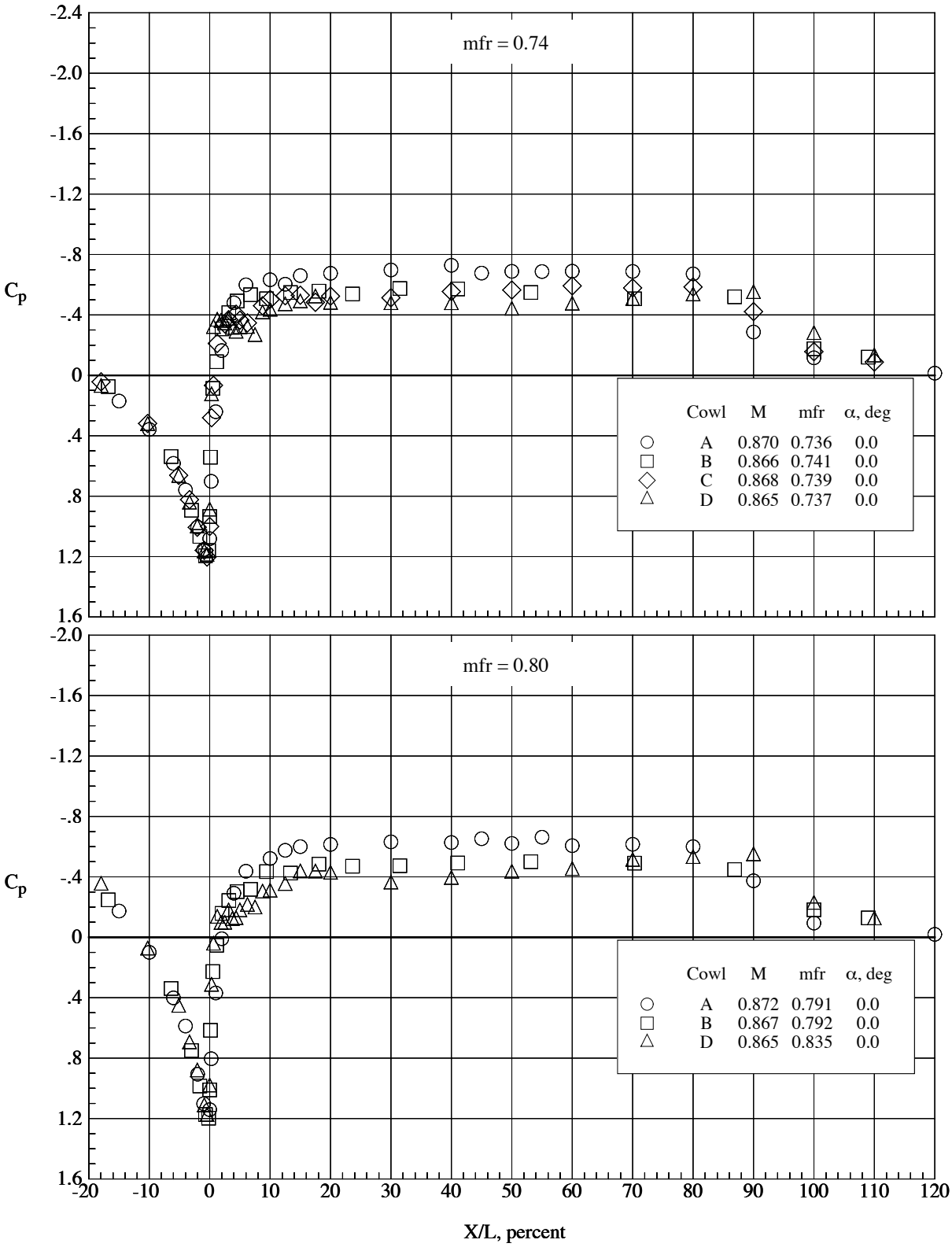
(a) mfr = 0.27 and 0.50.

Figure 18.- Comparison of pressure distributions at a Mach number of 0.87 for cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



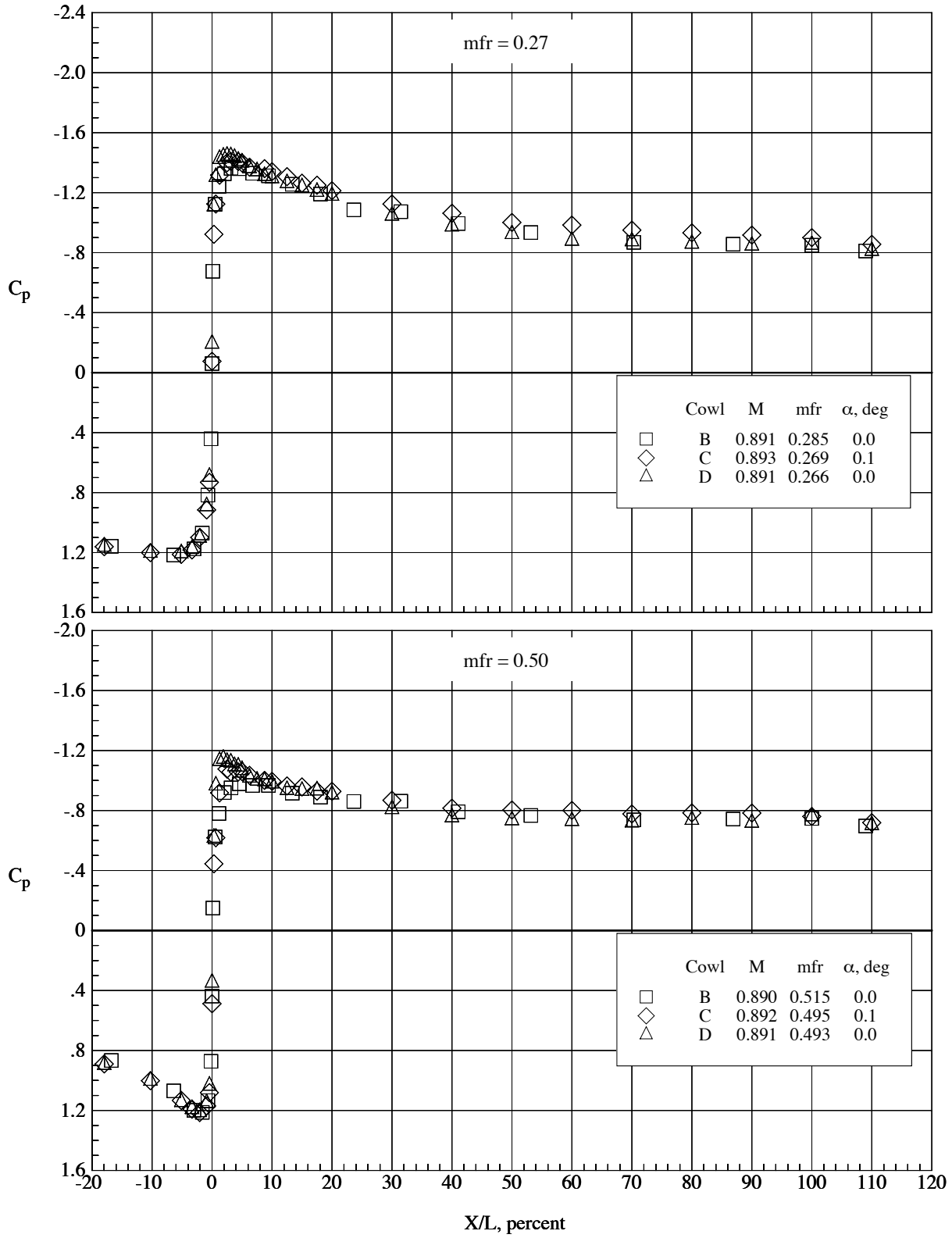
(b) mfr = 0.61 and 0.69.

Figure 18.- Continued.



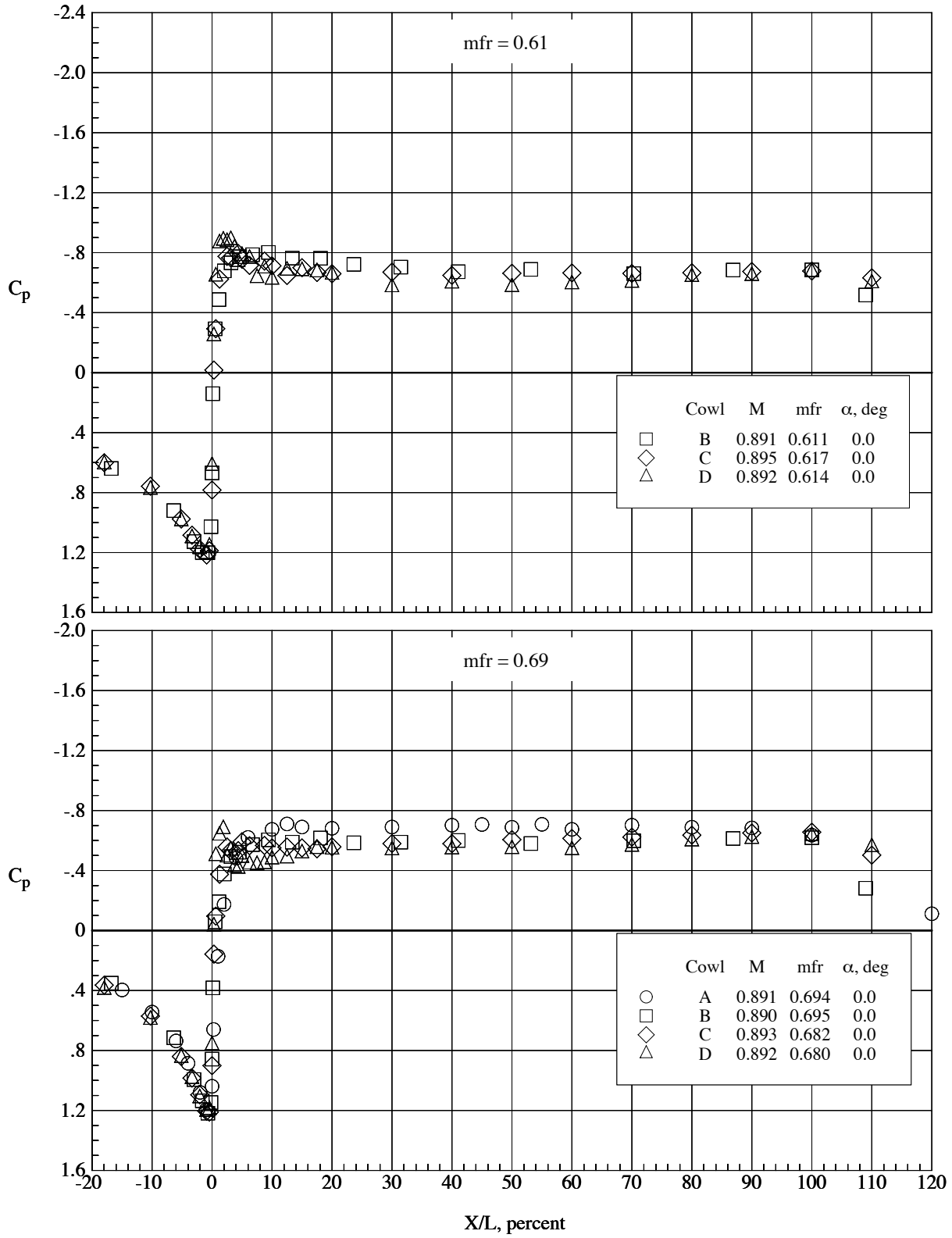
(c) mfr = 0.74 and 0.80.

Figure 18.- Concluded.



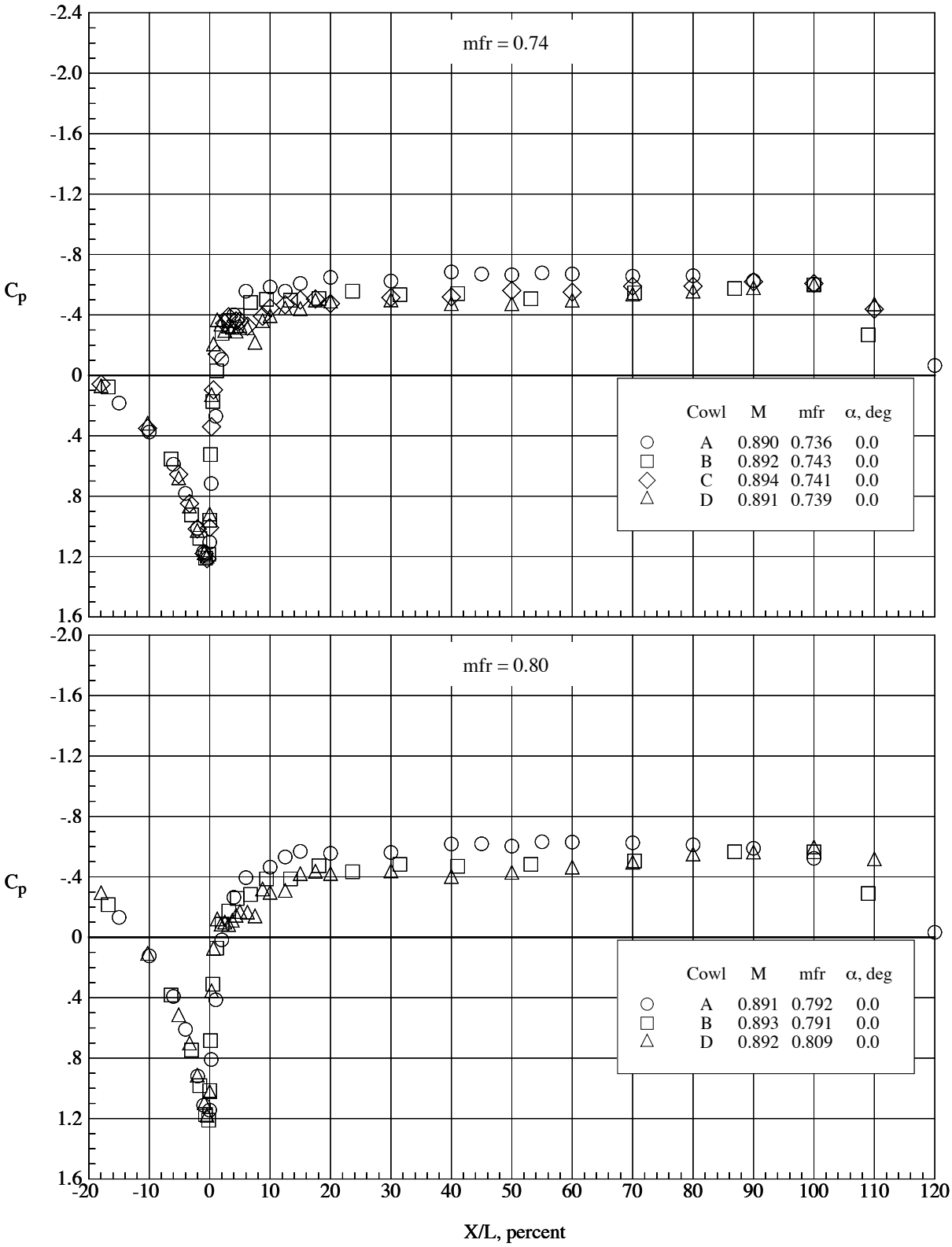
(a) mfr = 0.27 and 0.50.

Figure 19.- Comparison of pressure distributions at a Mach number of 0.89 for cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



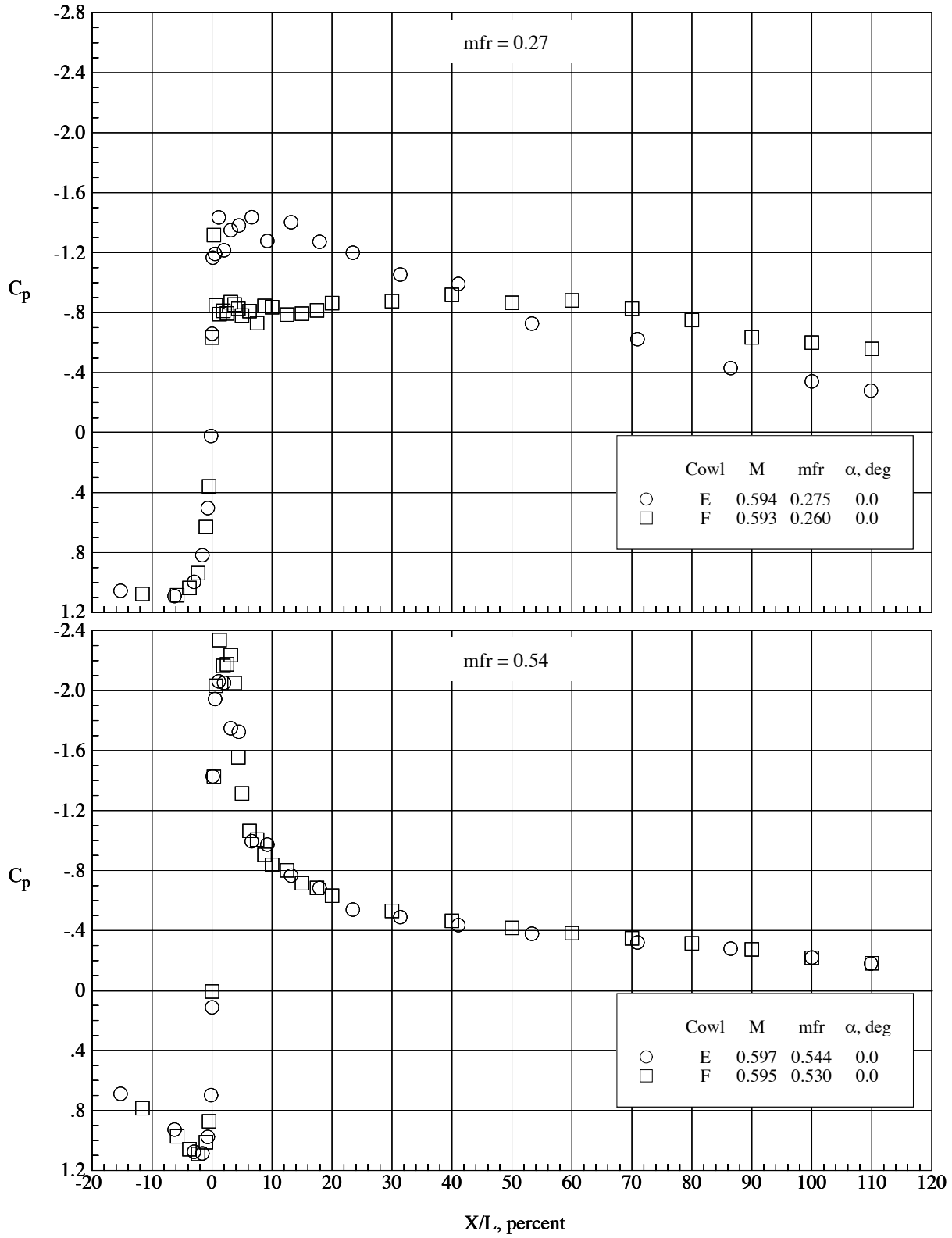
(b) mfr = 0.61 and 0.69.

Figure 19.- Continued.



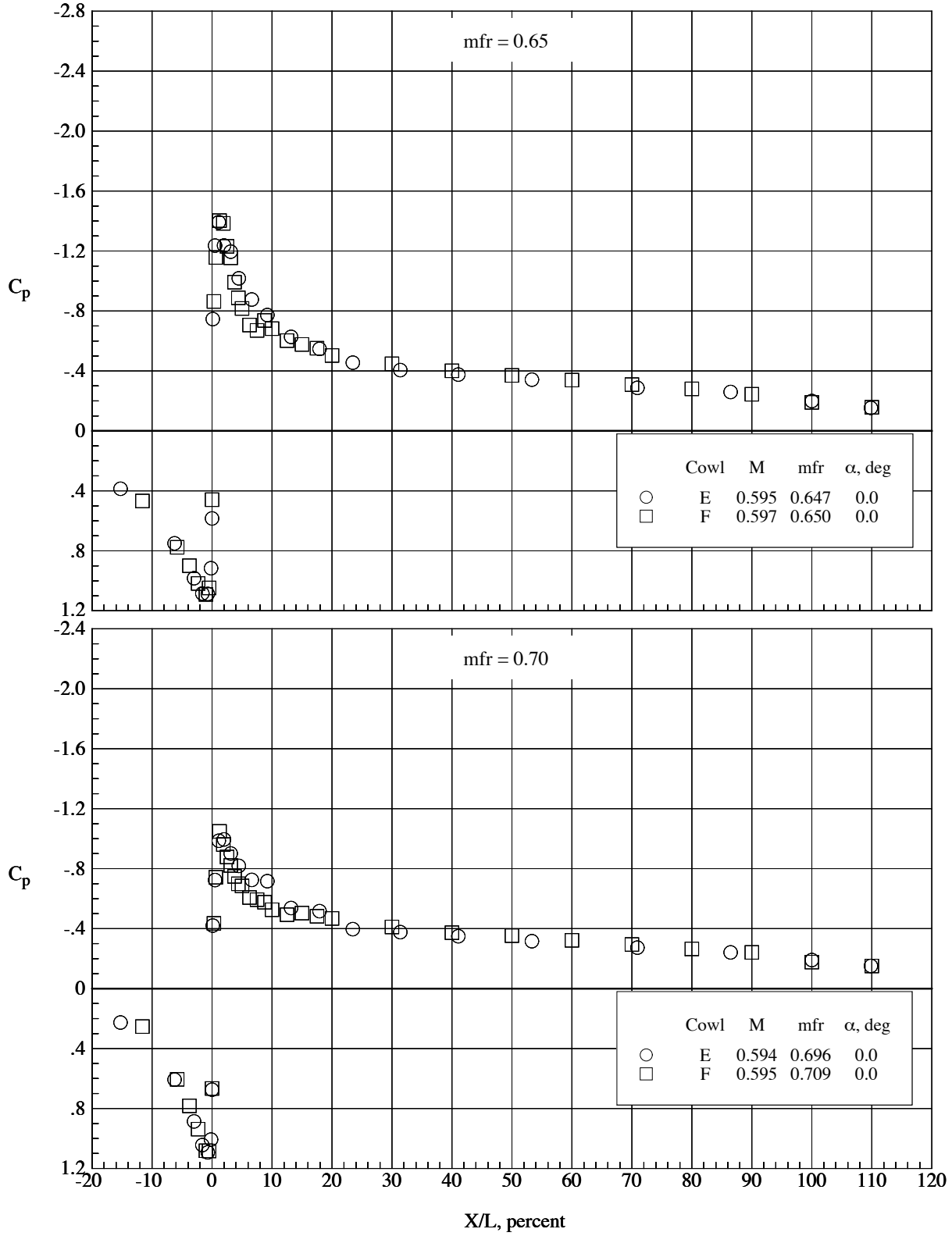
(c) mfr = 0.74 and 0.80.

Figure 19.- Concluded.



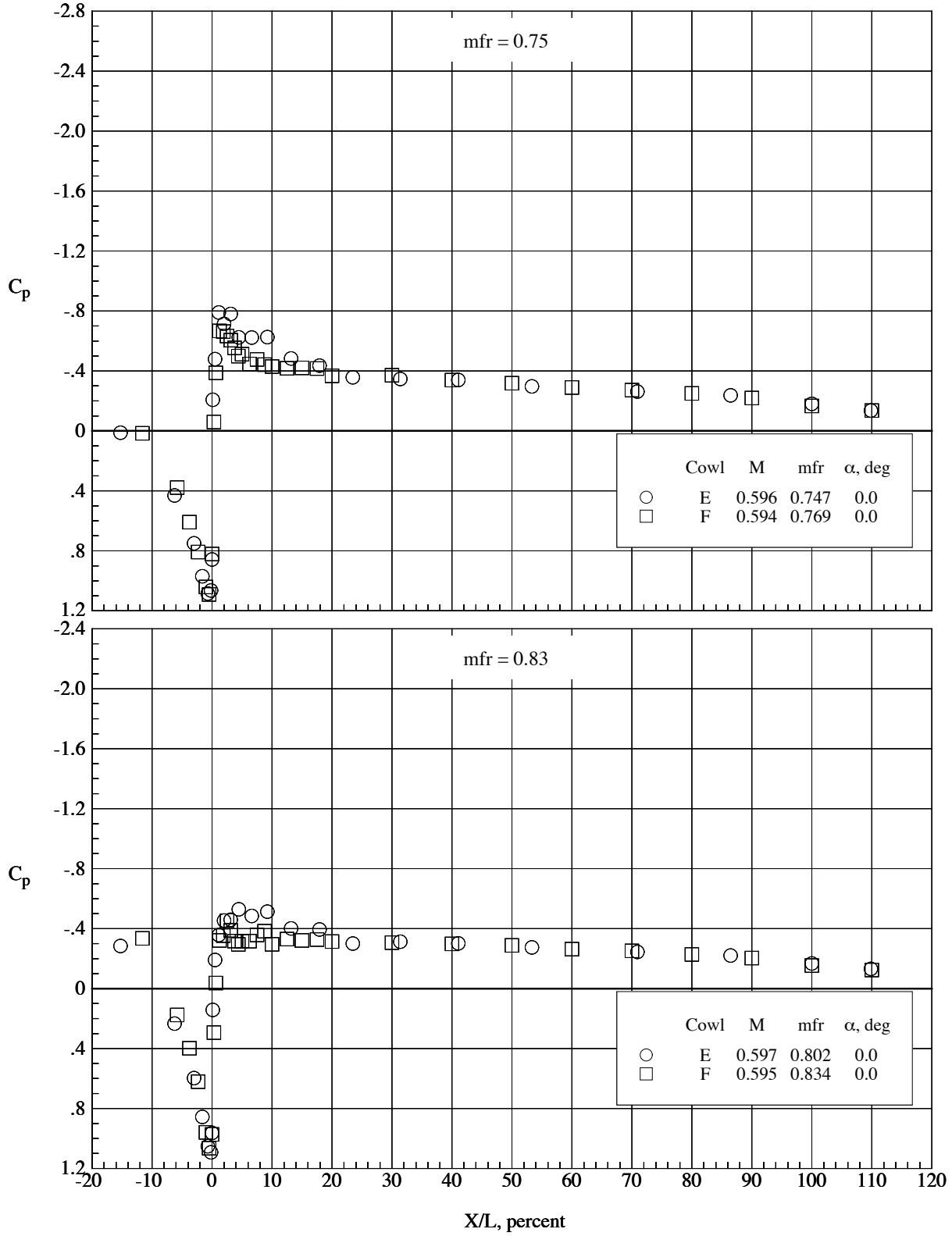
(a) mfr = 0.27 and 0.54.

Figure 20.- Comparison of pressure distributions at a Mach number of 0.60 for two cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



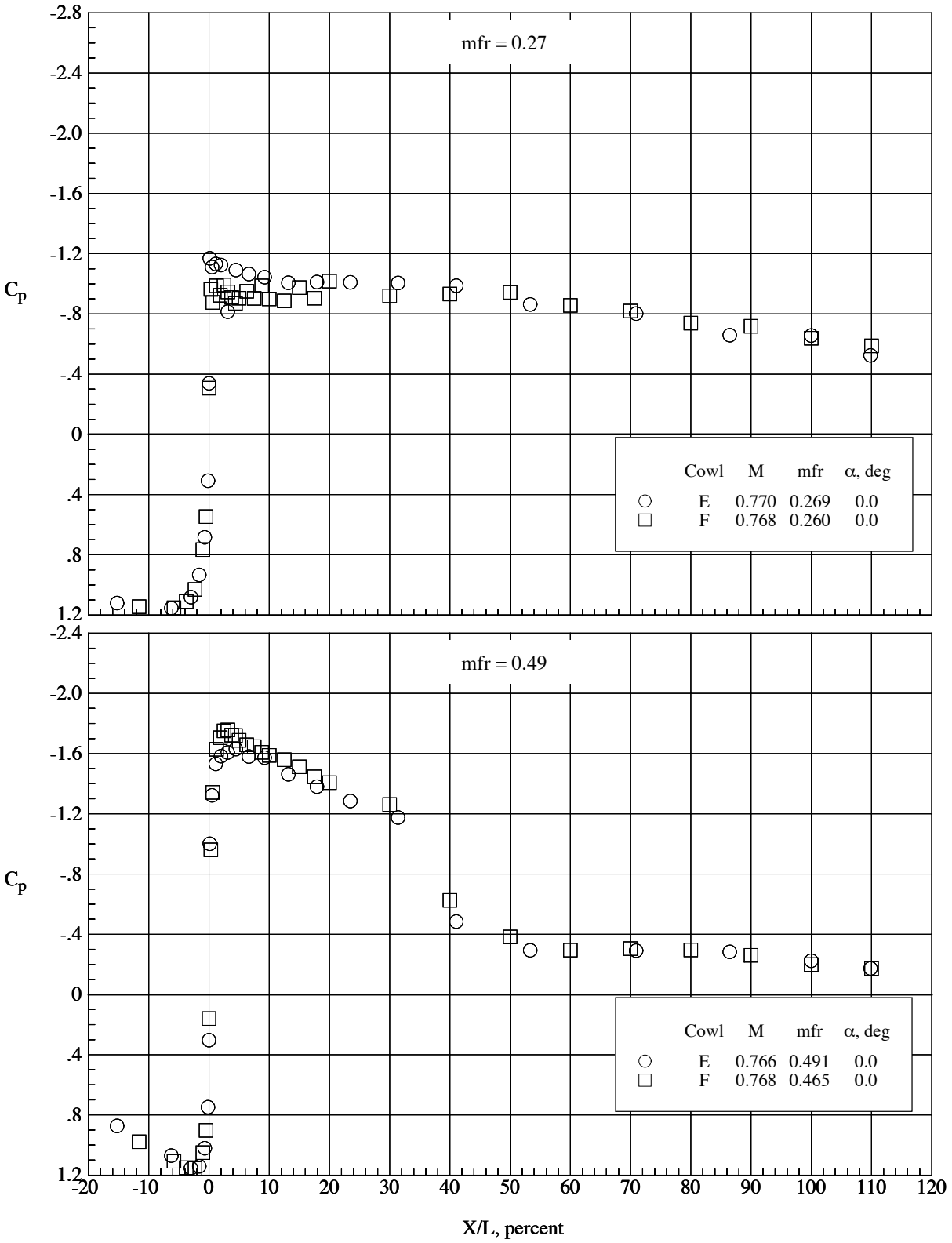
(b) mfr = 0.65 and 0.70.

Figure 20.- Continued.



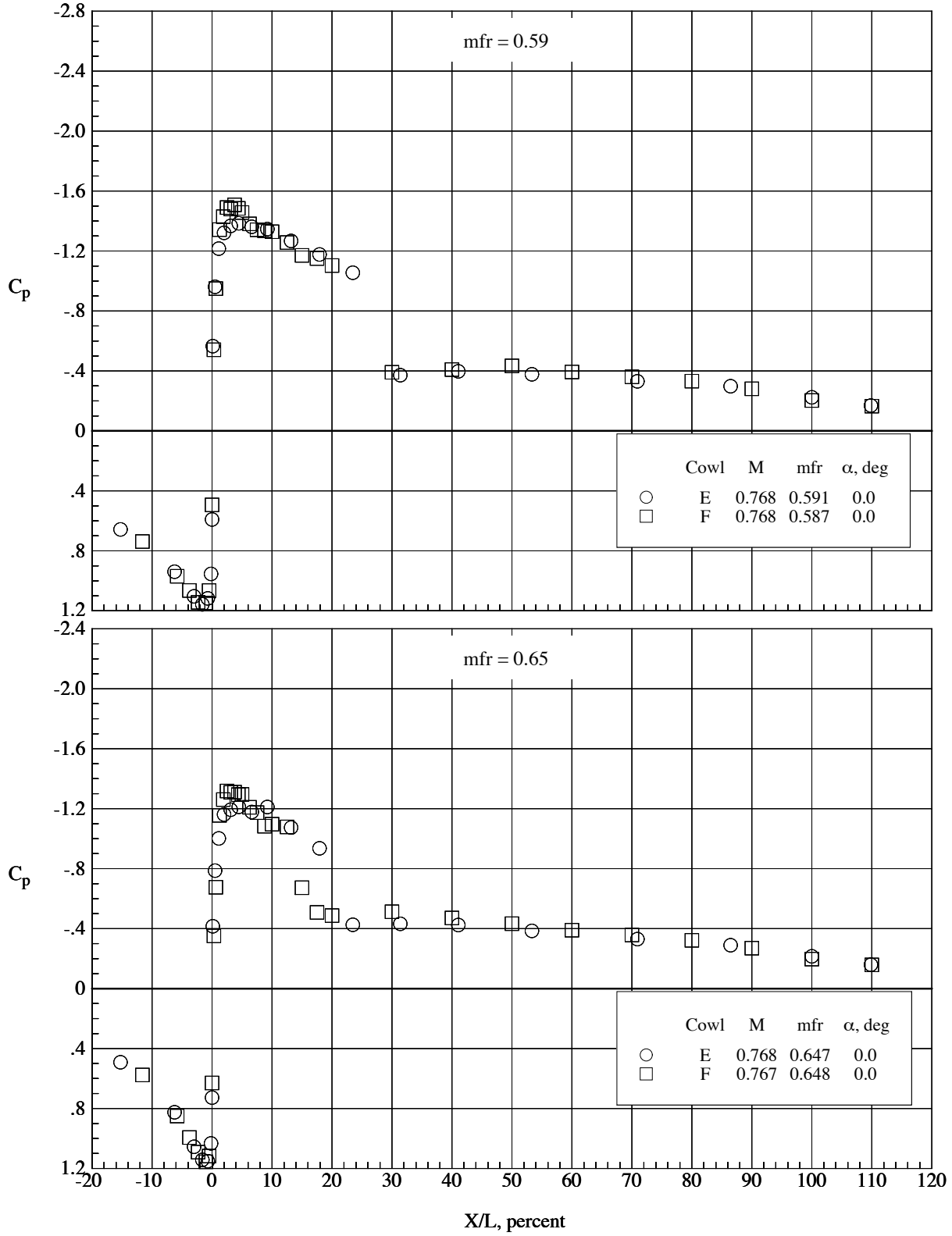
(c) mfr = 0.75 and 0.83.

Figure 20.- Concluded.



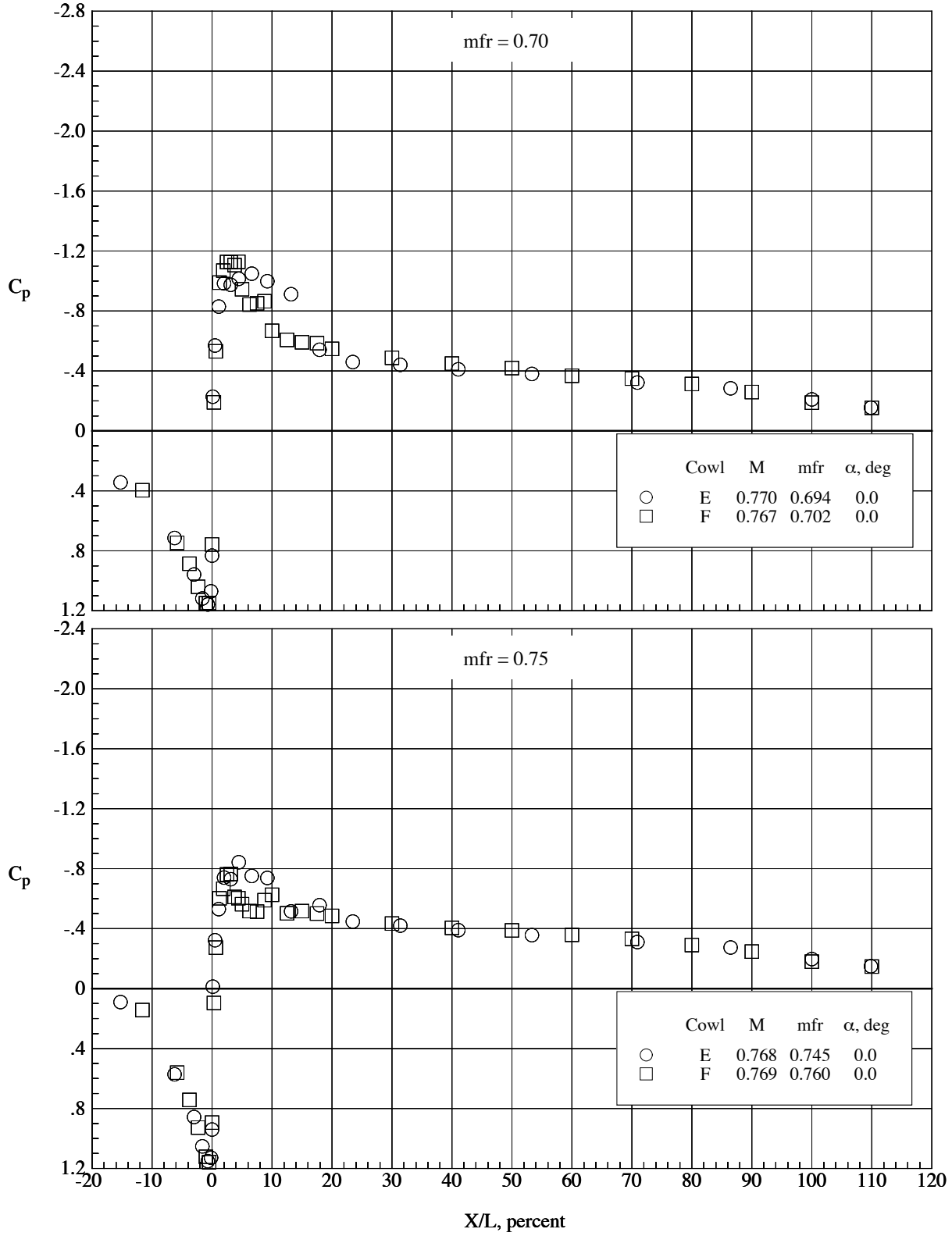
(a) mfr = 0.27 and 0.49.

Figure 21.- Comparison of pressure distributions at a Mach number of 0.77 for two cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



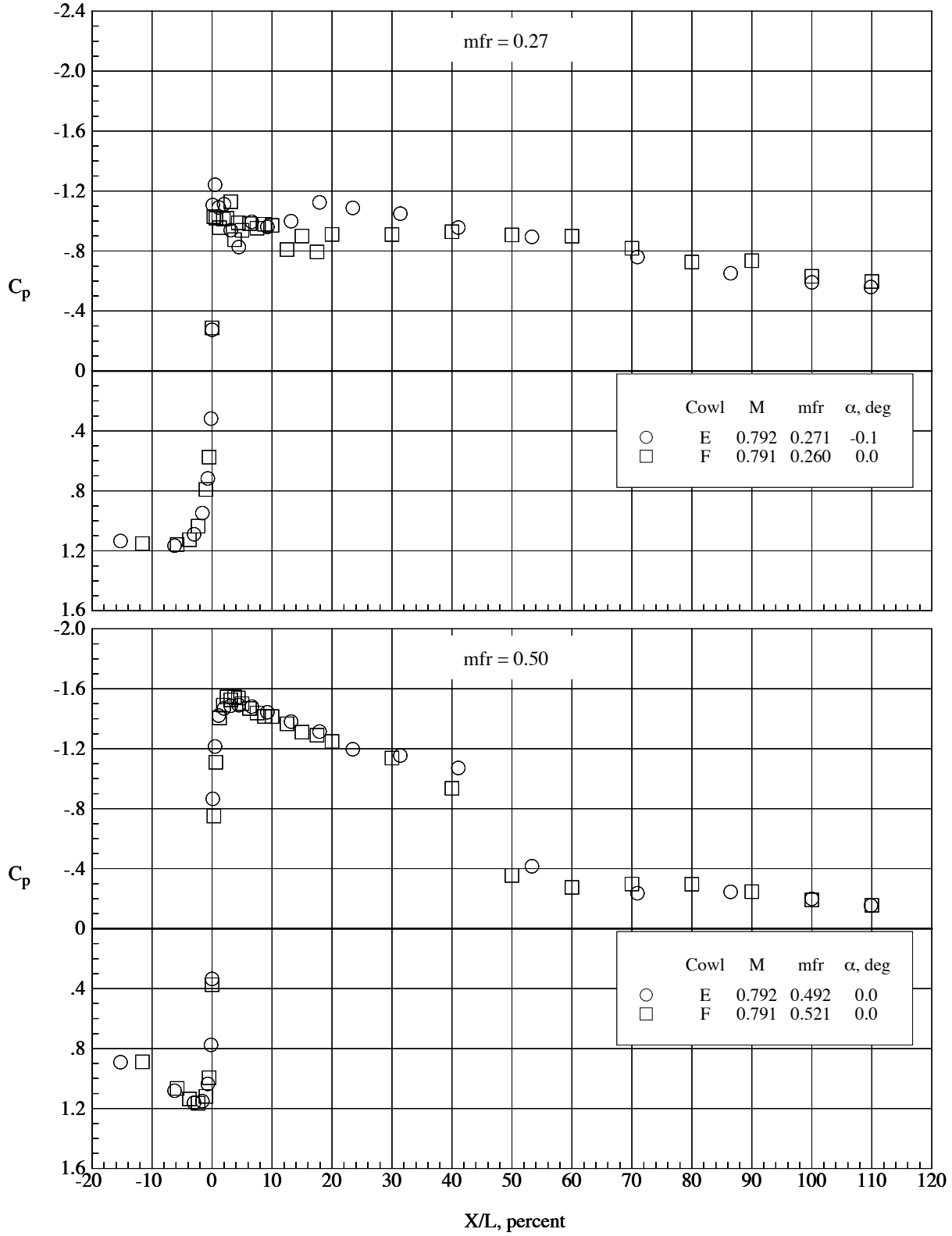
(b) mfr = 0.59 and 0.65.

Figure 21.- Continued.



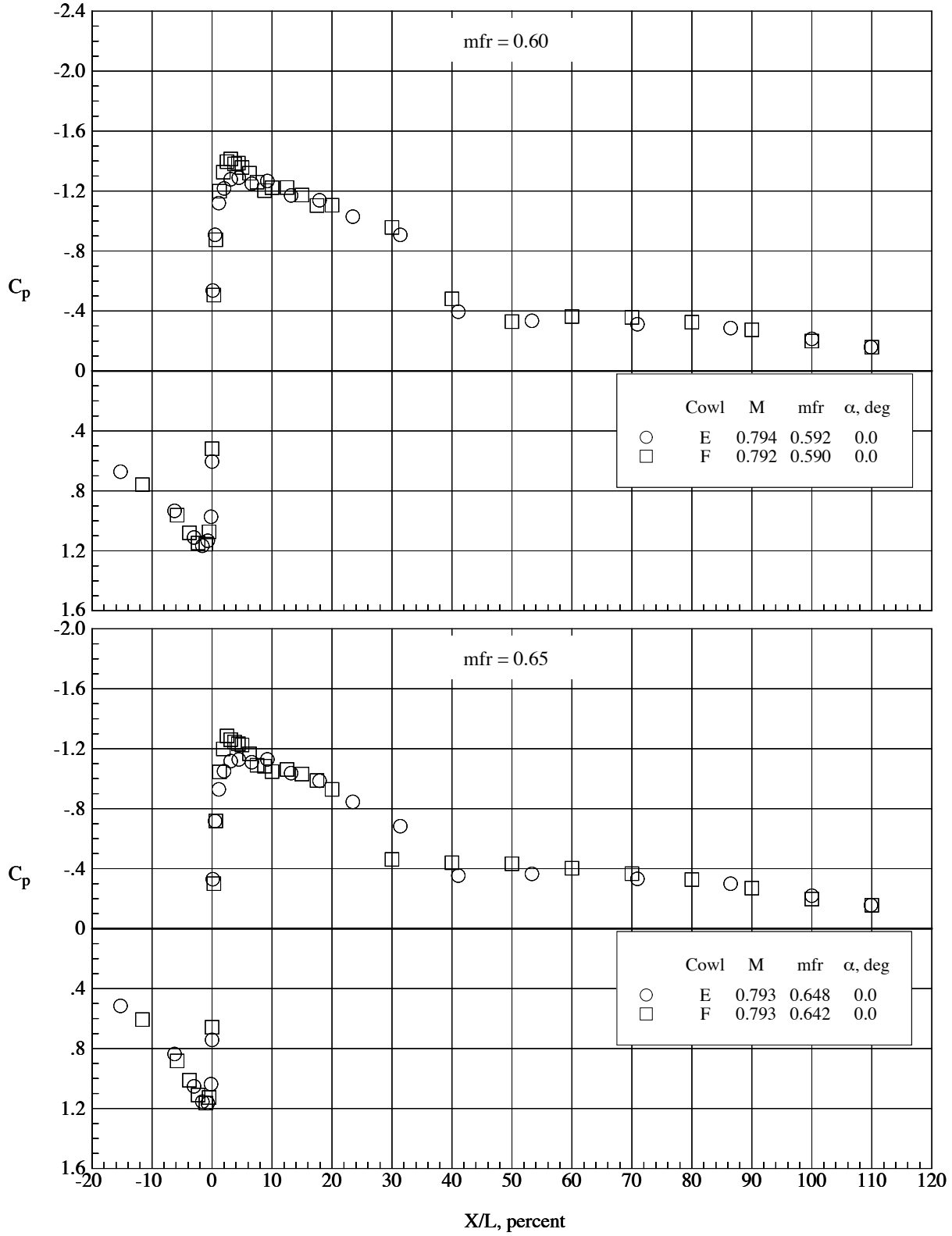
(c) mfr = 0.70 and 0.75.

Figure 21.- Concluded.



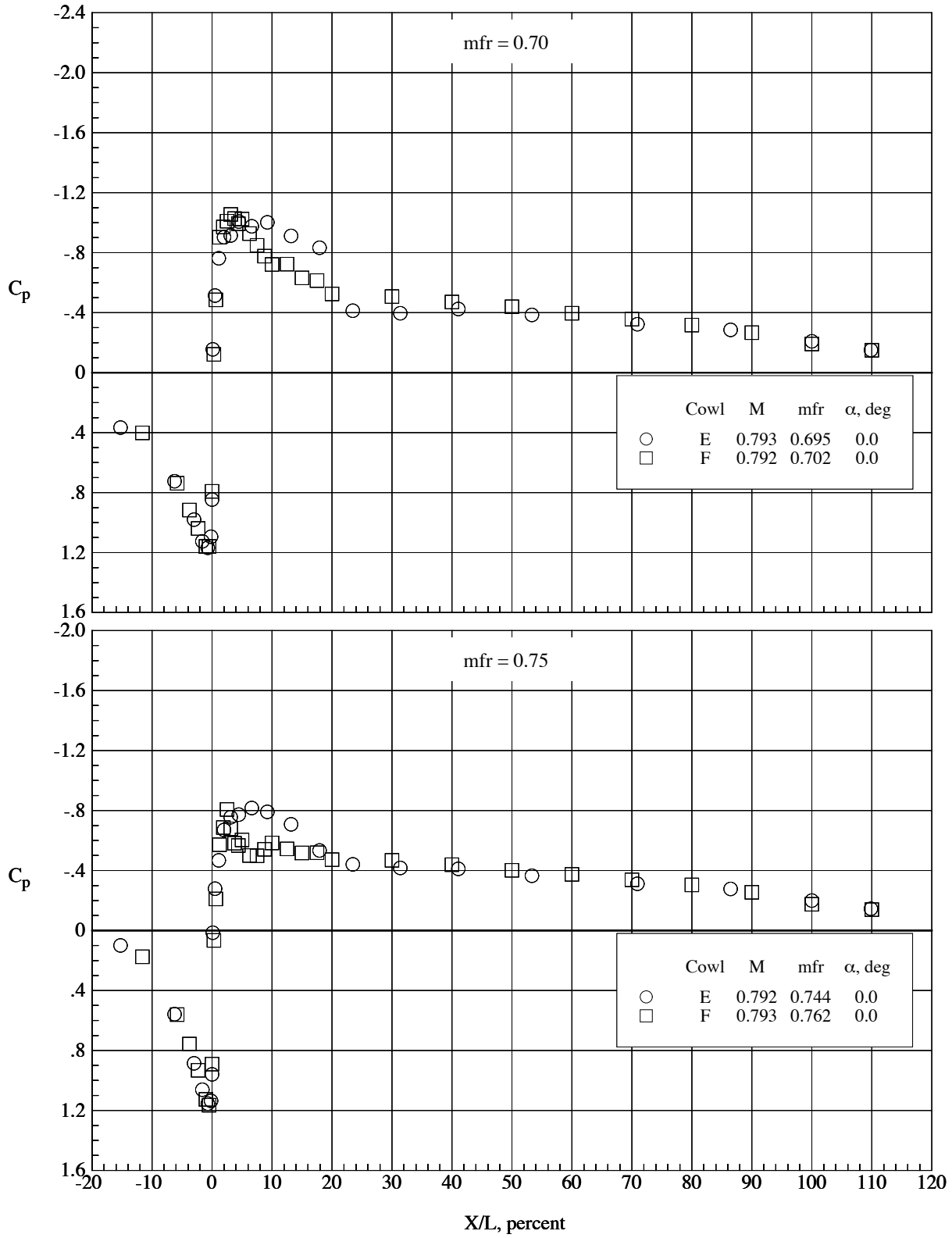
(a) mfr = 0.27 and 0.50.

Figure 22.- Comparison of pressure distributions at a Mach number of 0.80 for two cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



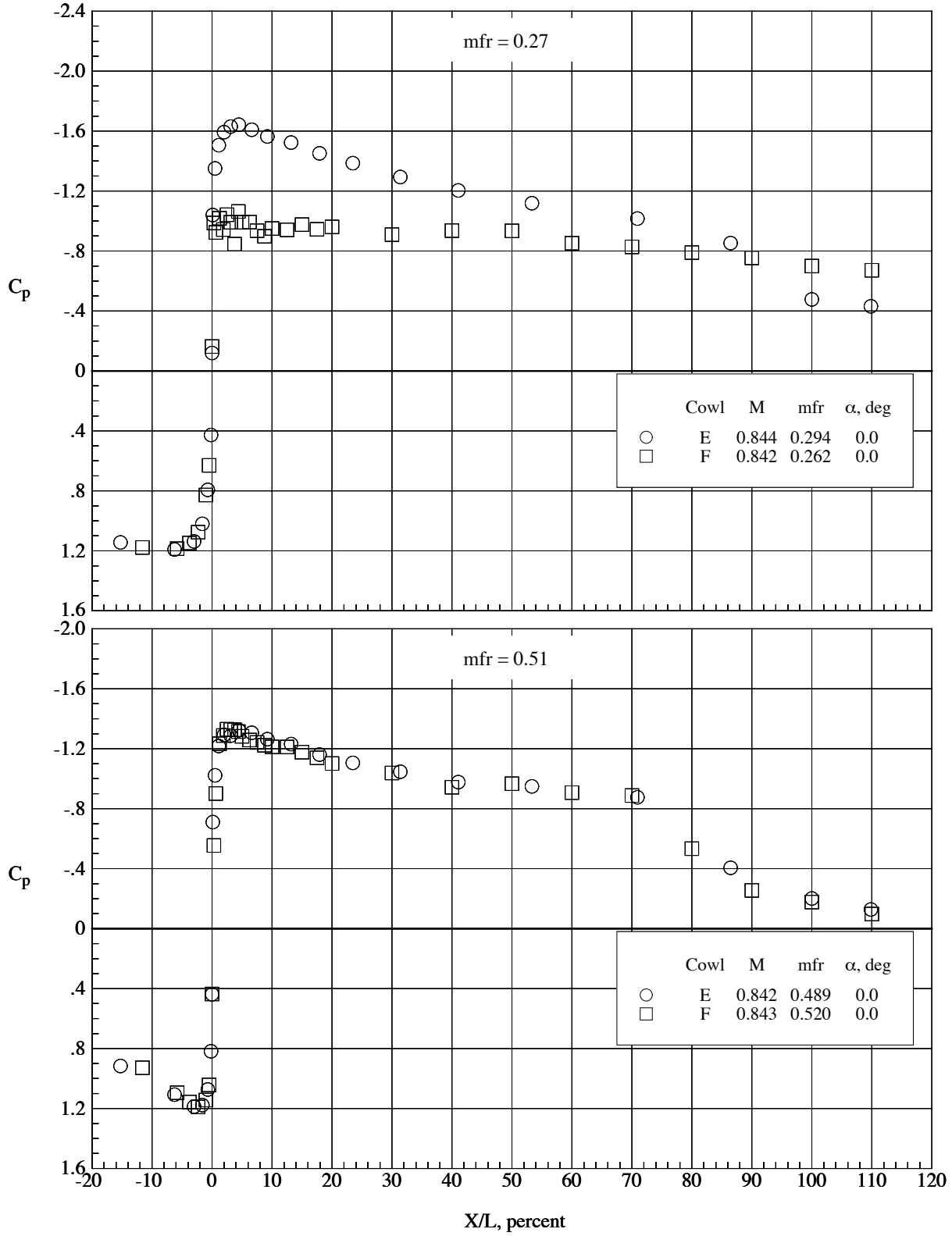
(b) mfr = 0.60 and 0.65.

Figure 22.- Continued.



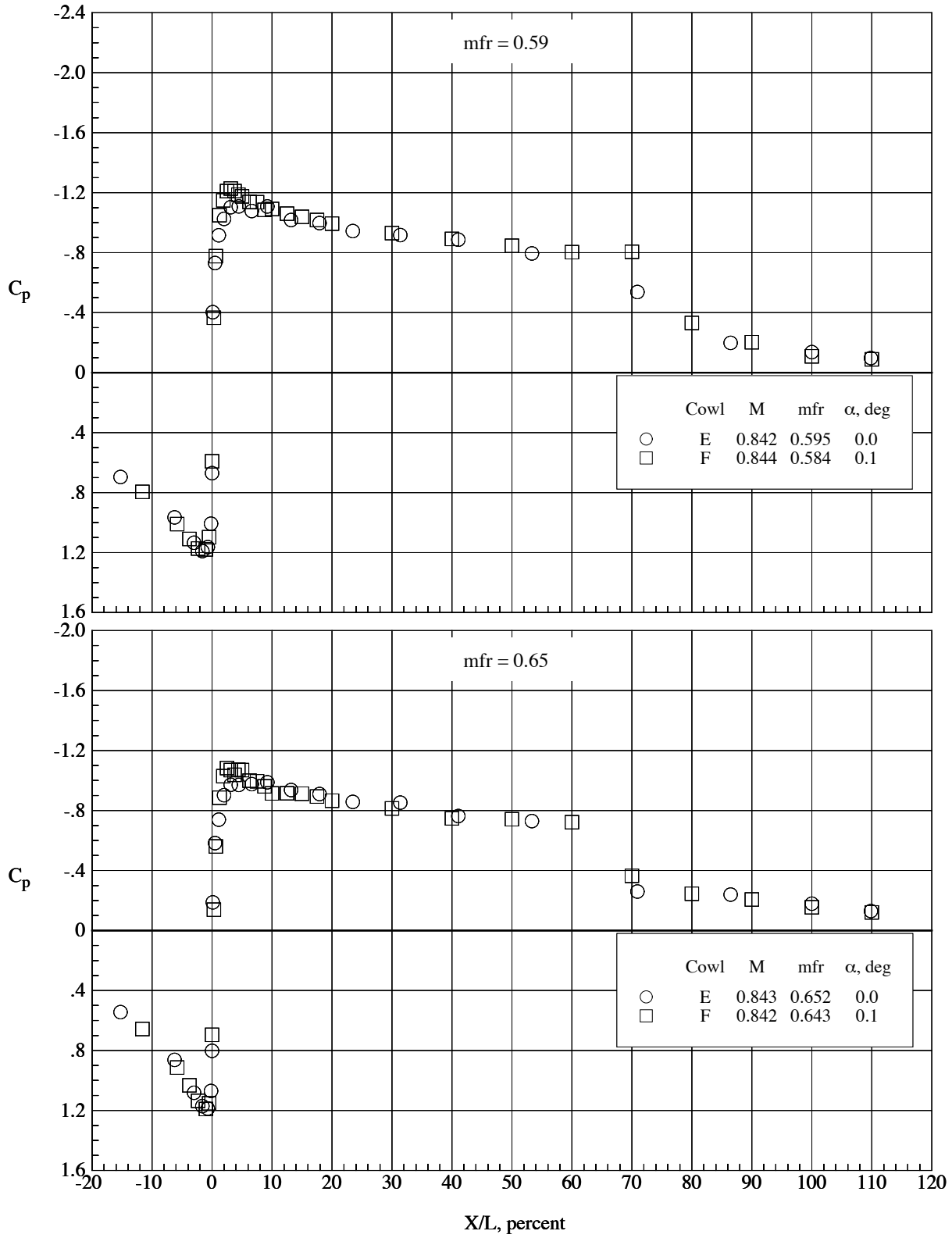
(c) mfr = 0.70 and 0.75.

Figure 22.- Concluded.



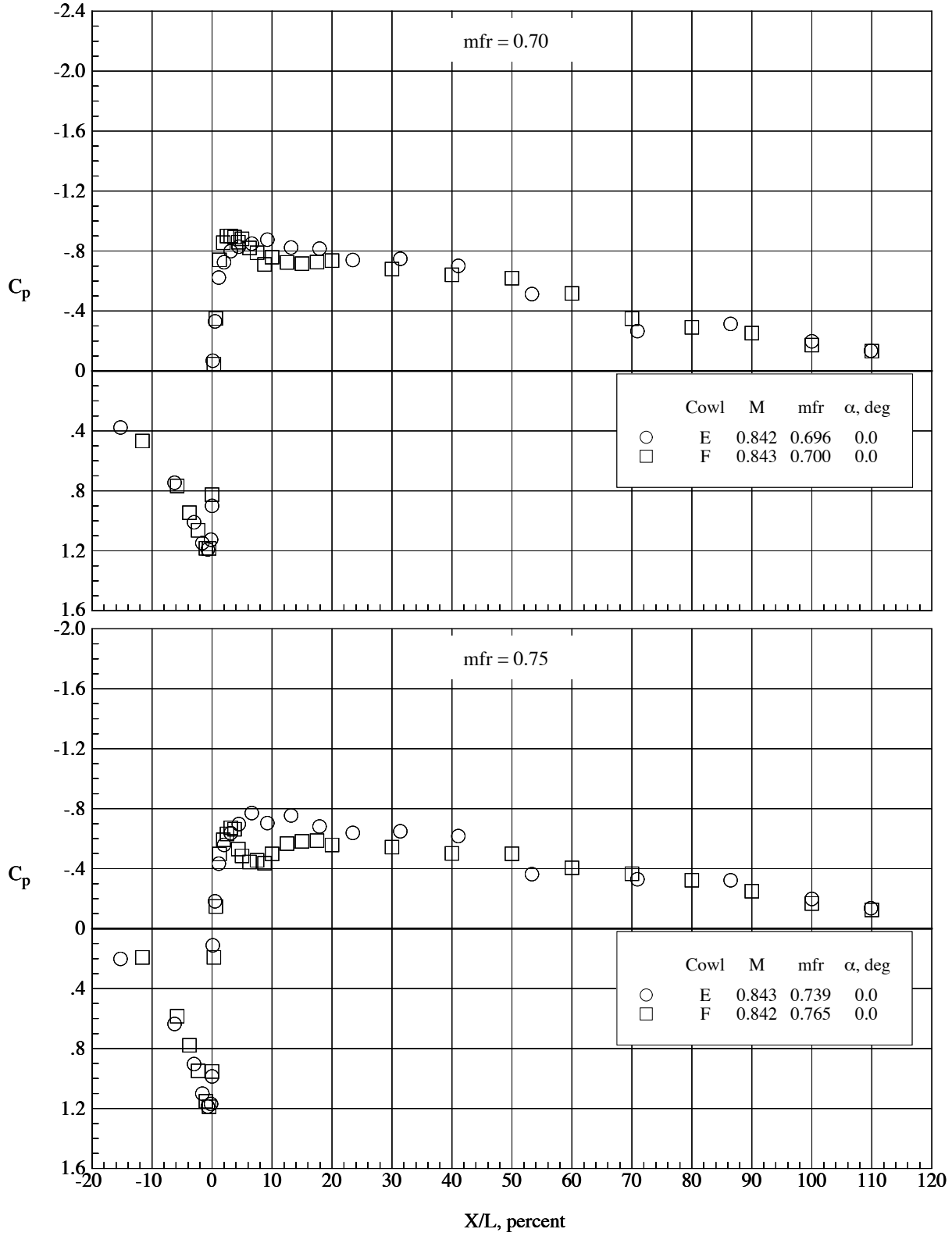
(a) mfr = 0.27 and 0.51.

Figure 23.- Comparison of pressure distributions at a Mach number of 0.84 for two cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



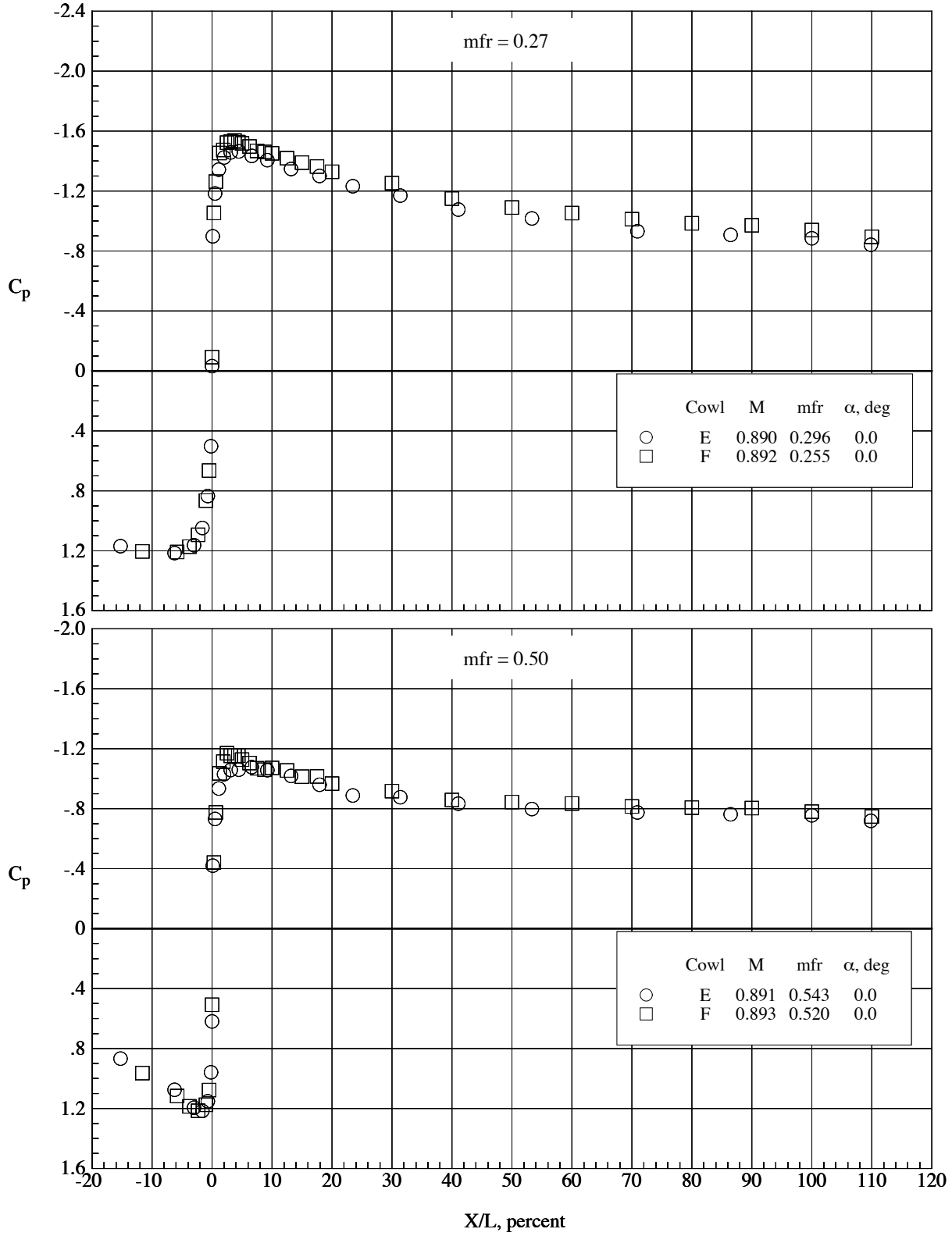
(b) mfr = 0.59 and 0.65.

Figure 23.- Continued.



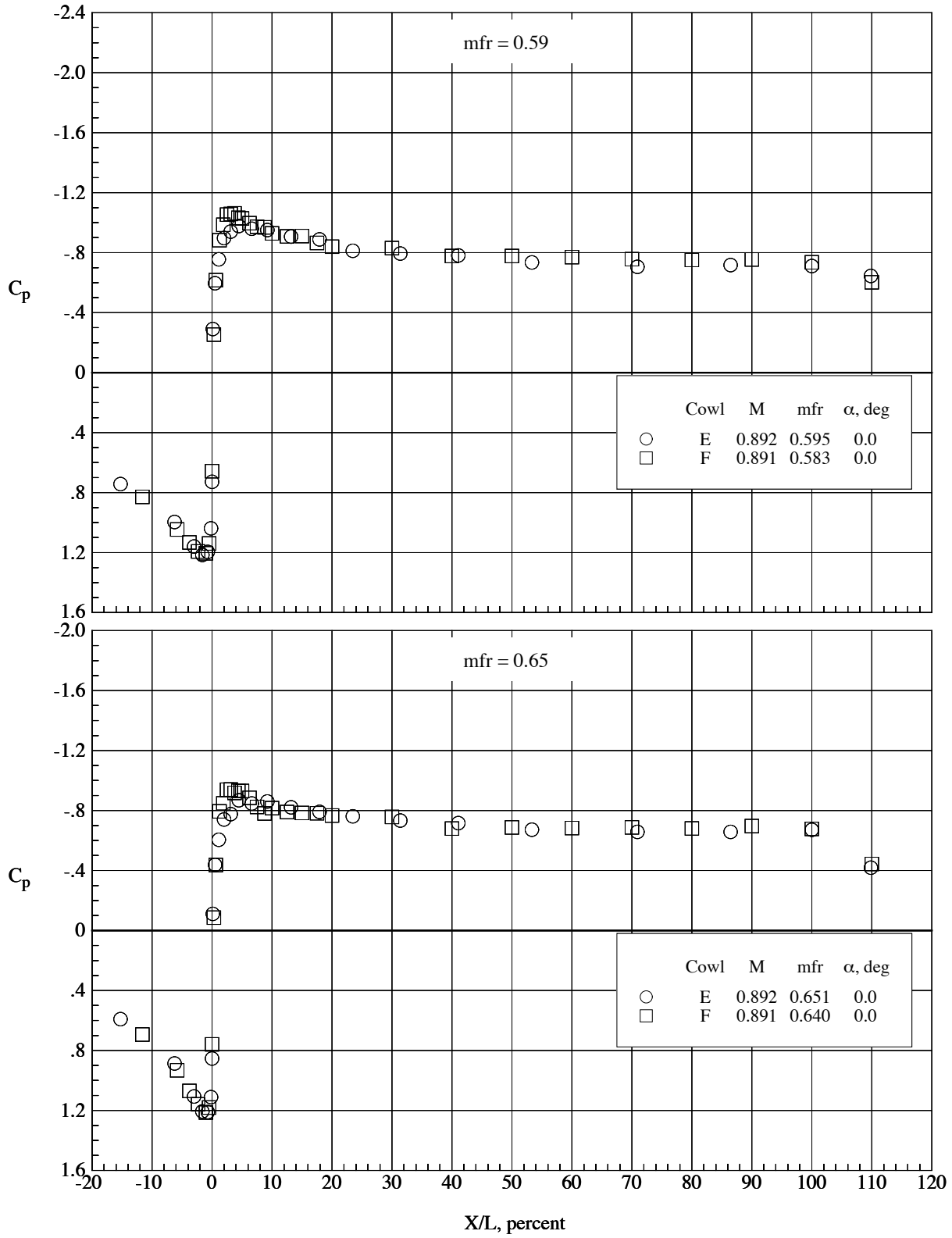
(c) mfr = 0.70 and 0.75.

Figure 23.- Concluded.



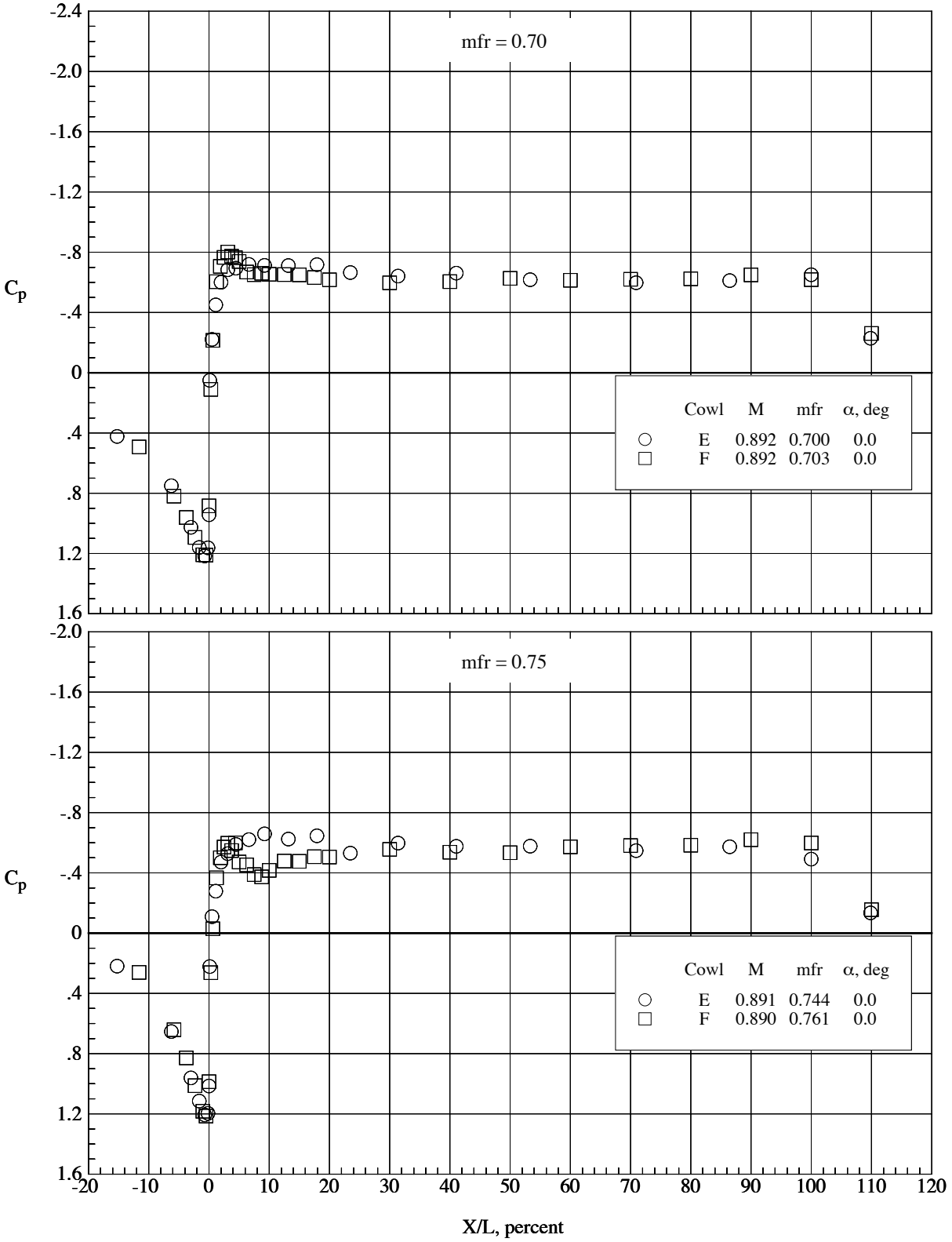
(a) mfr = 0.27 and 0.50.

Figure 24.- Comparison of pressure distributions at a Mach number of 0.89 for two cowls having the same length and highlight diameters at comparable mass-flow ratios at $\alpha = 0°$.



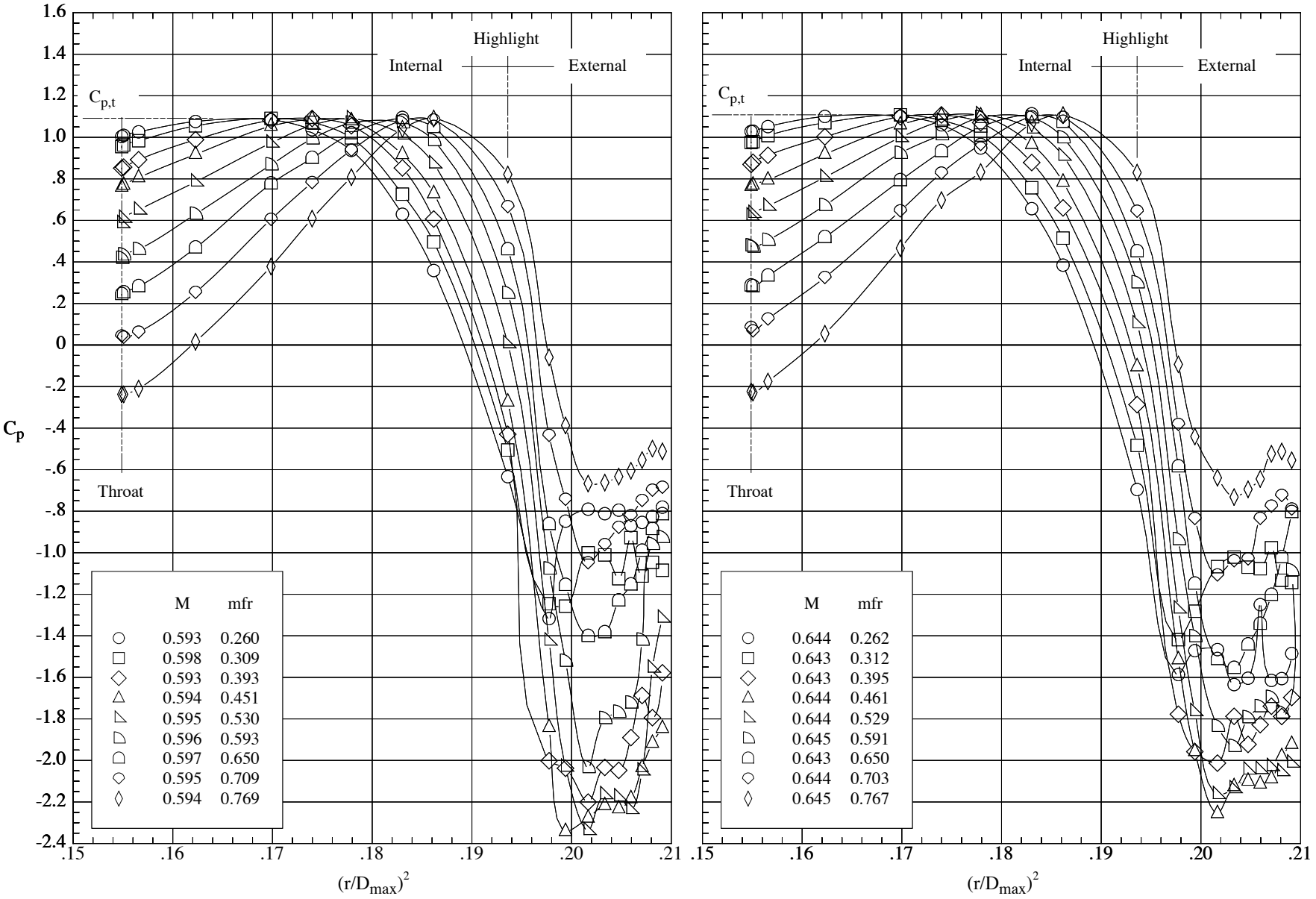
(b) mfr = 0.59 and 0.65.

Figure 24.- Continued.



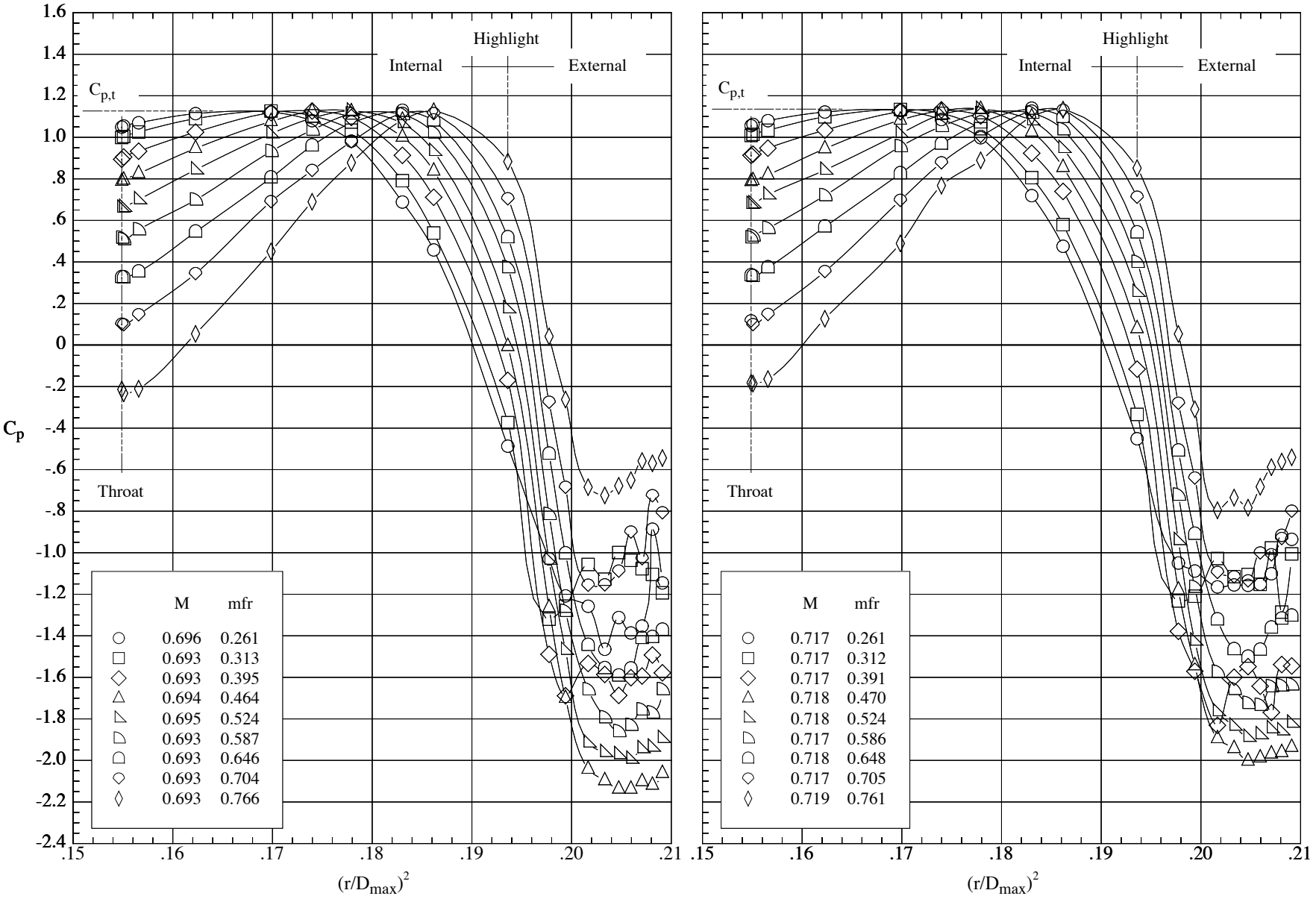
(c) mfr = 0.70 and 0.75.

Figure 24.- Concluded.



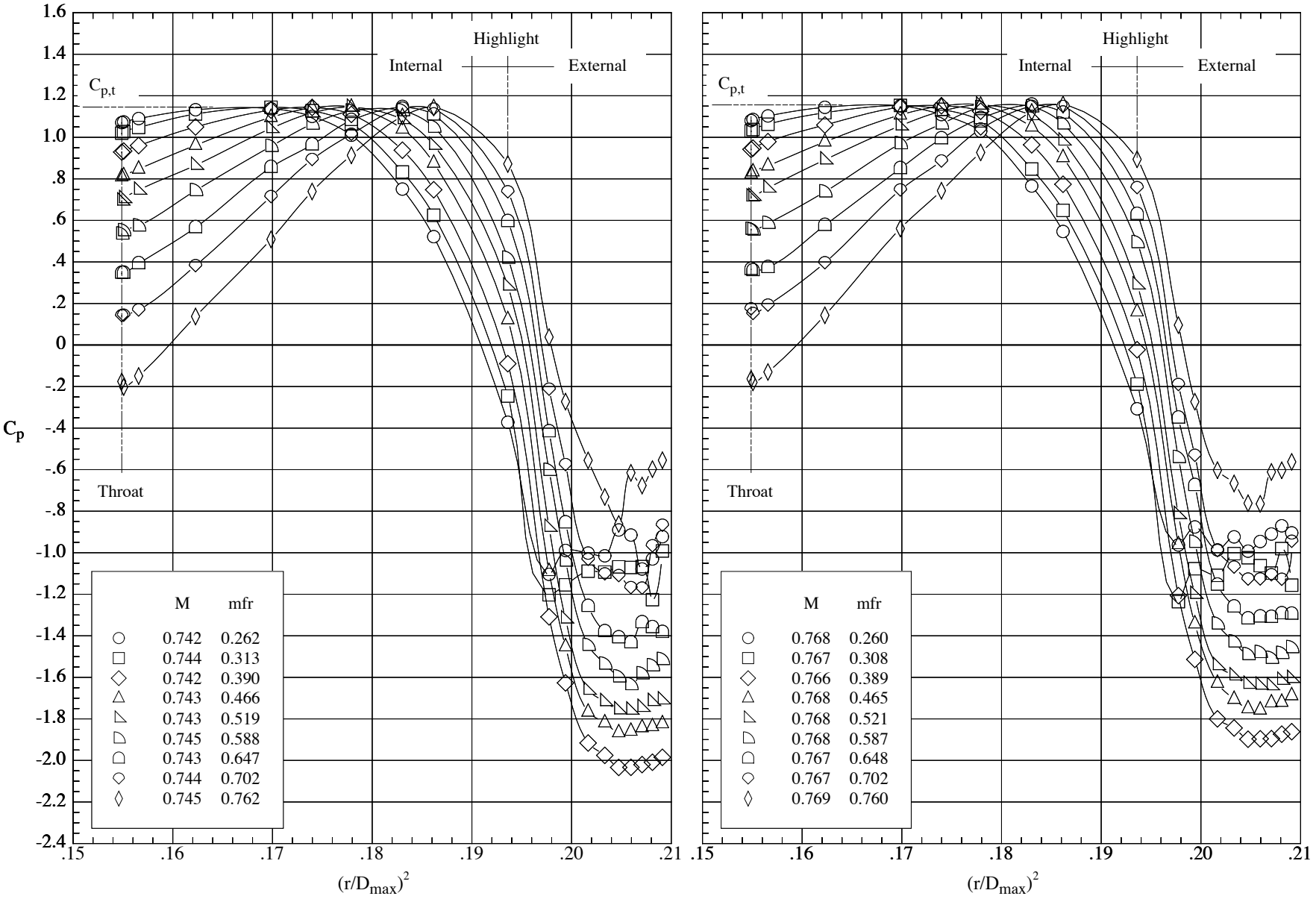
(a) M = 0.60 and 0.64.

Figure 25.- Stagnation point location on Cowl F for several mass-flow ratios at $\alpha = 0°$ at various Mach numbers. ($\phi = 0°$ row of orifices.)



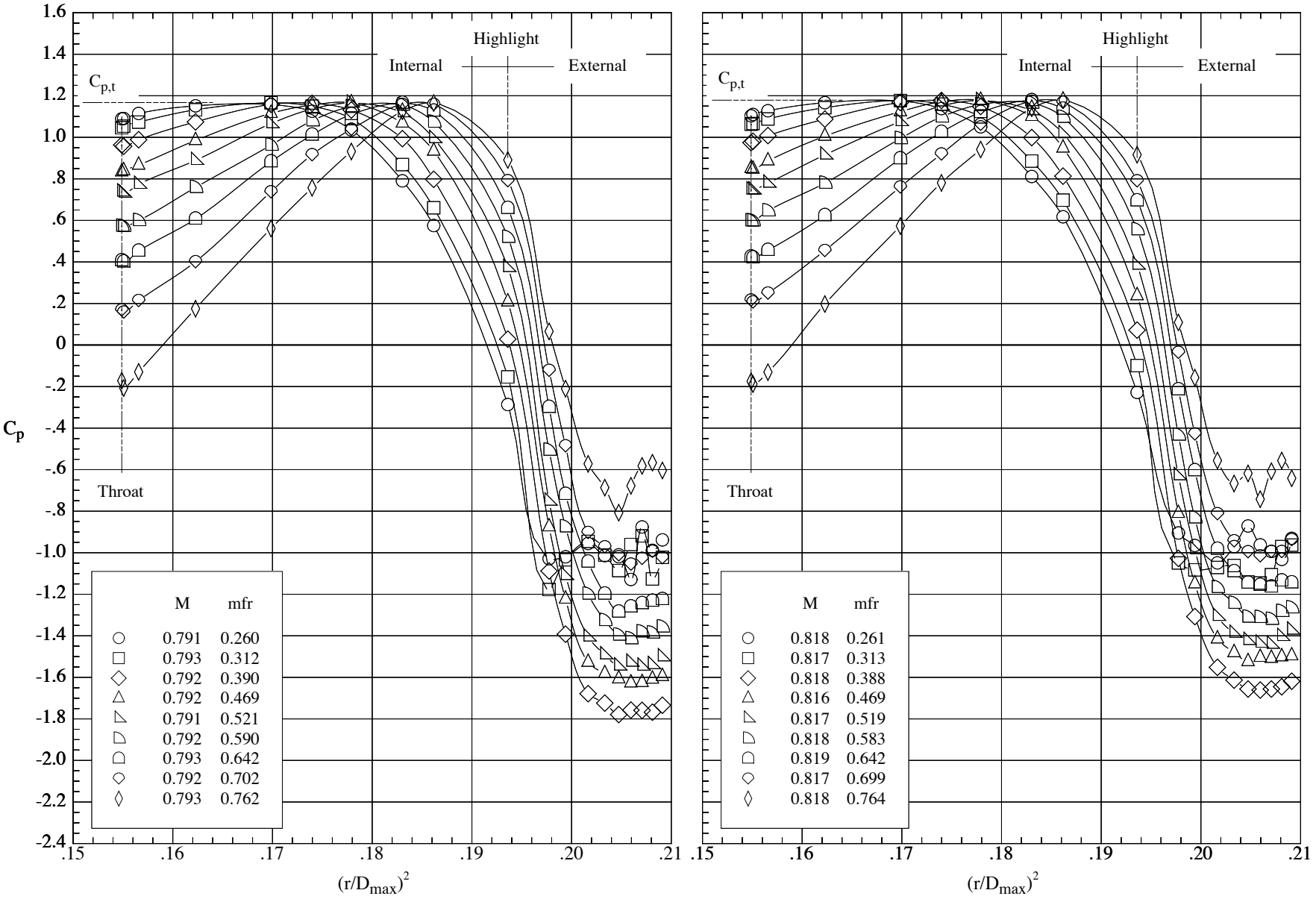
(b) M = 0.70 and 0.72.

Figure 25.- Continued.



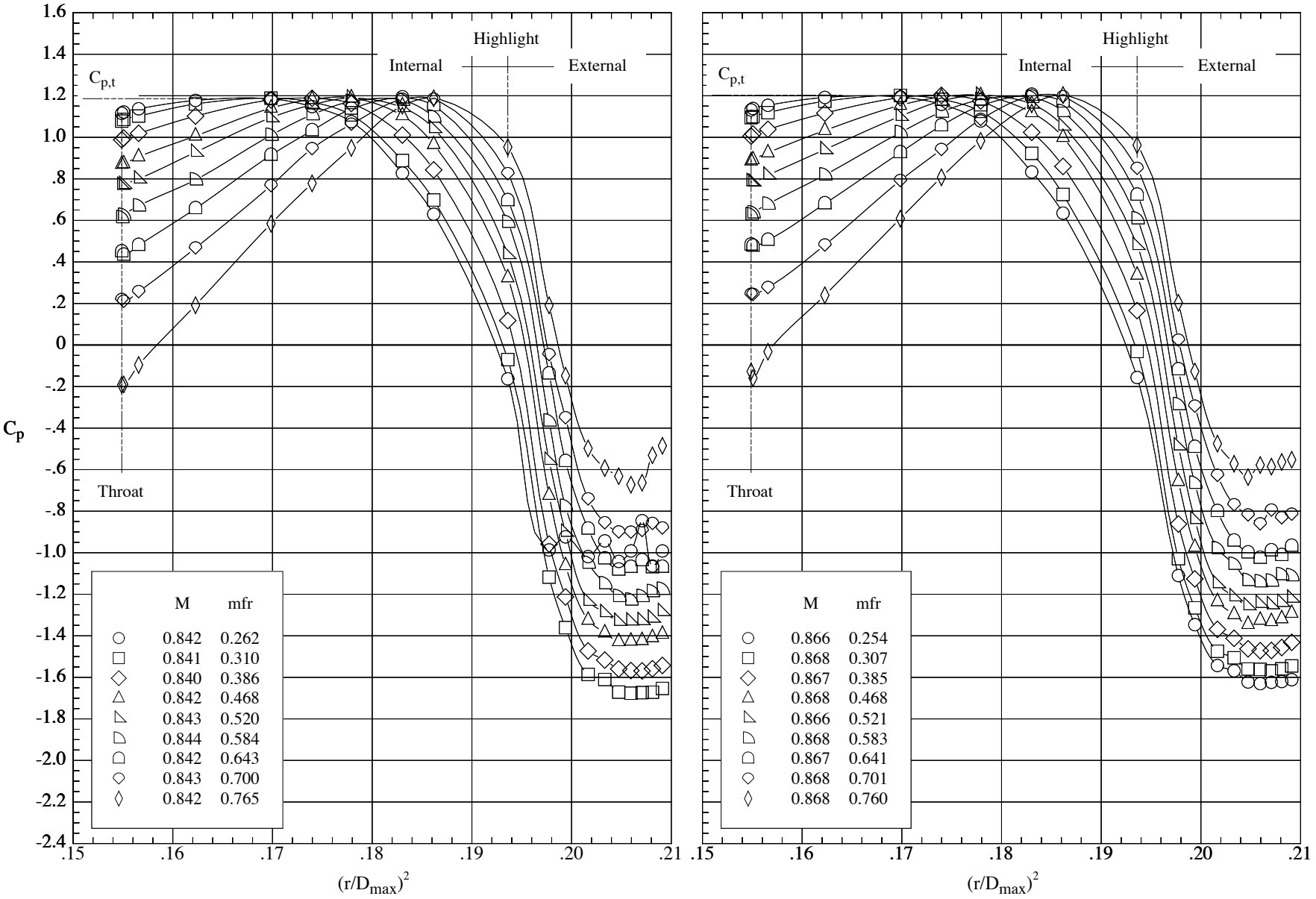
(c) M = 0.74 and 0.77.

Figure 25.- Continued.



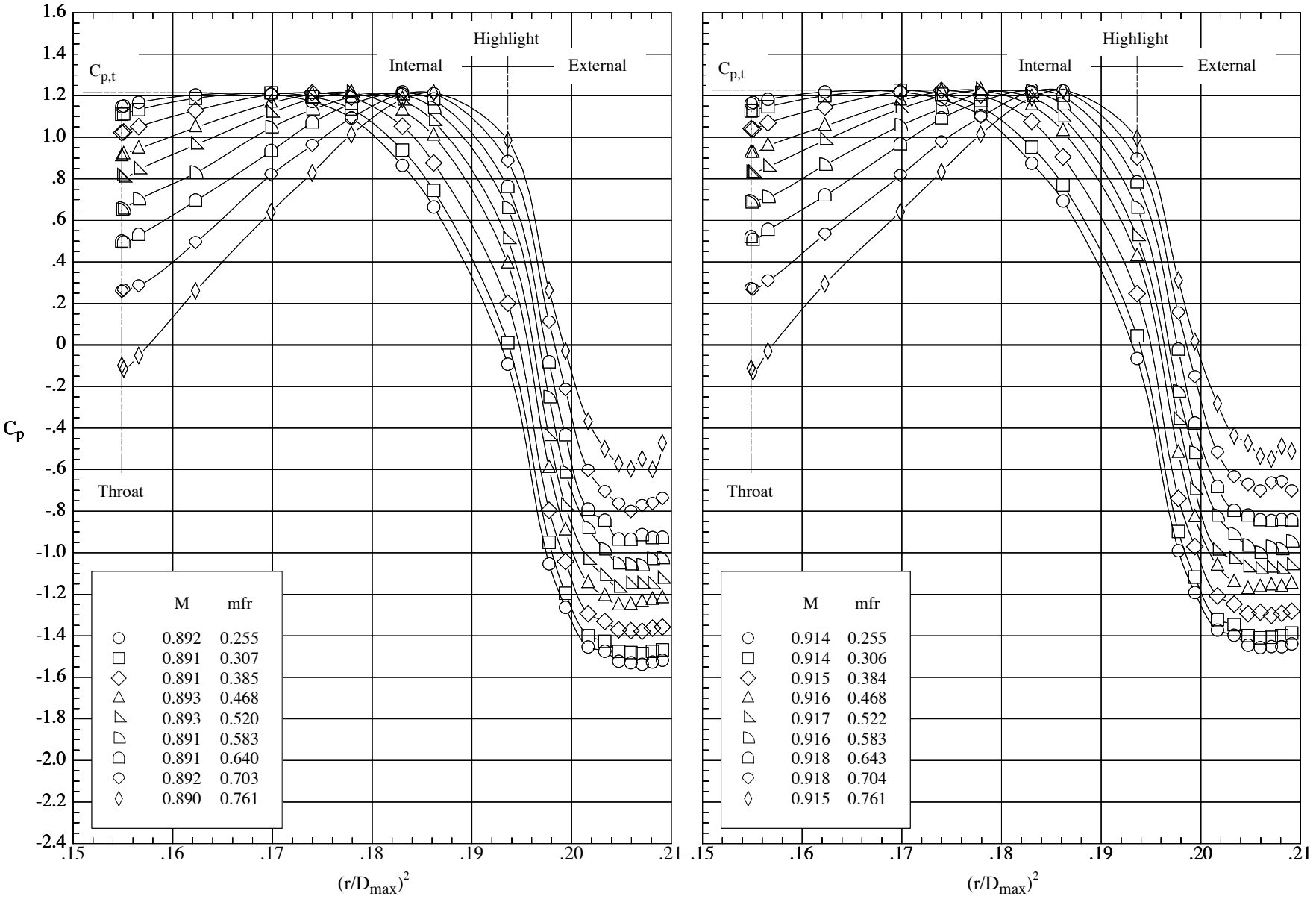
(d) M = 0.80 and 0.82.

Figure 25.- Continued.



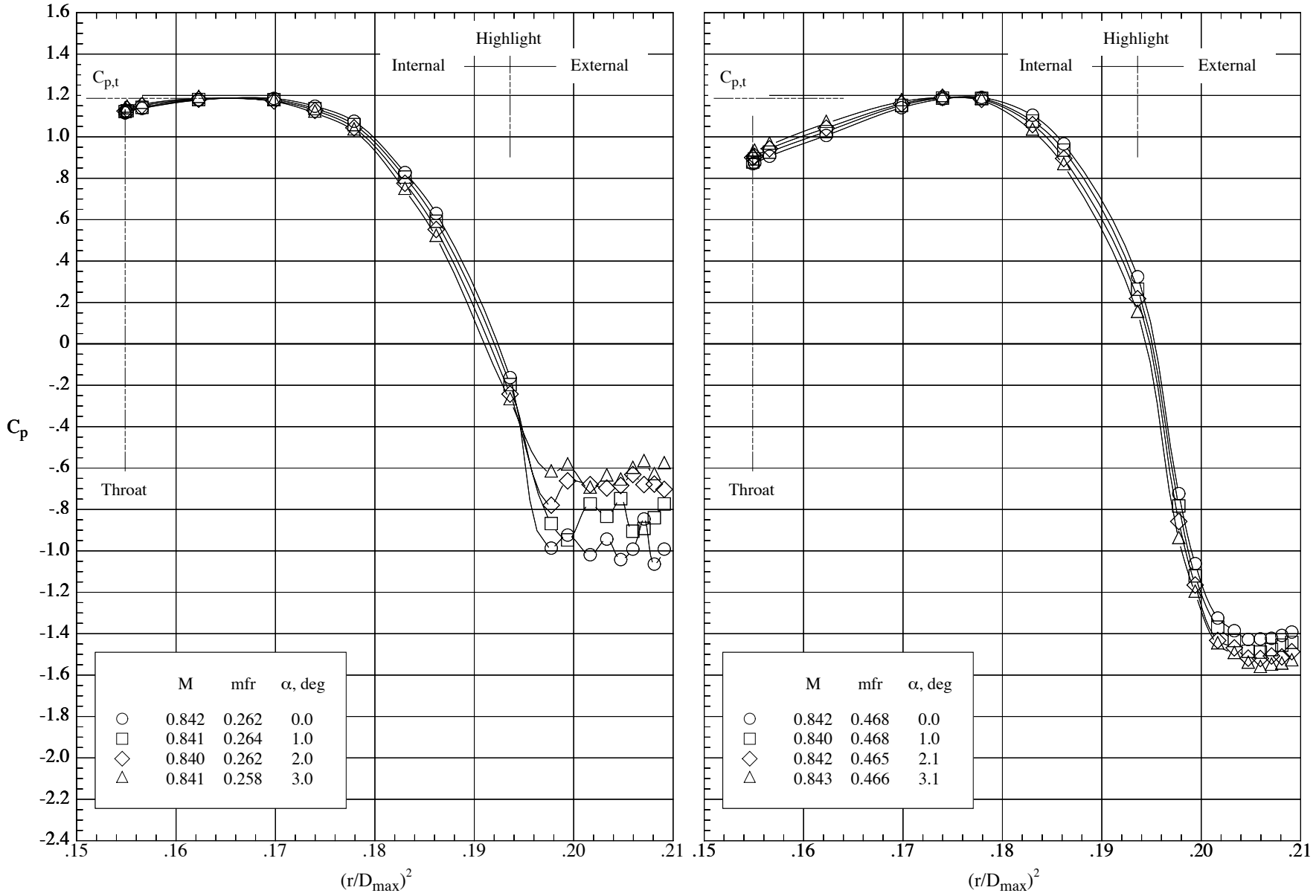
(e) M = 0.84 and 0.87.

Figure 25.- Continued.



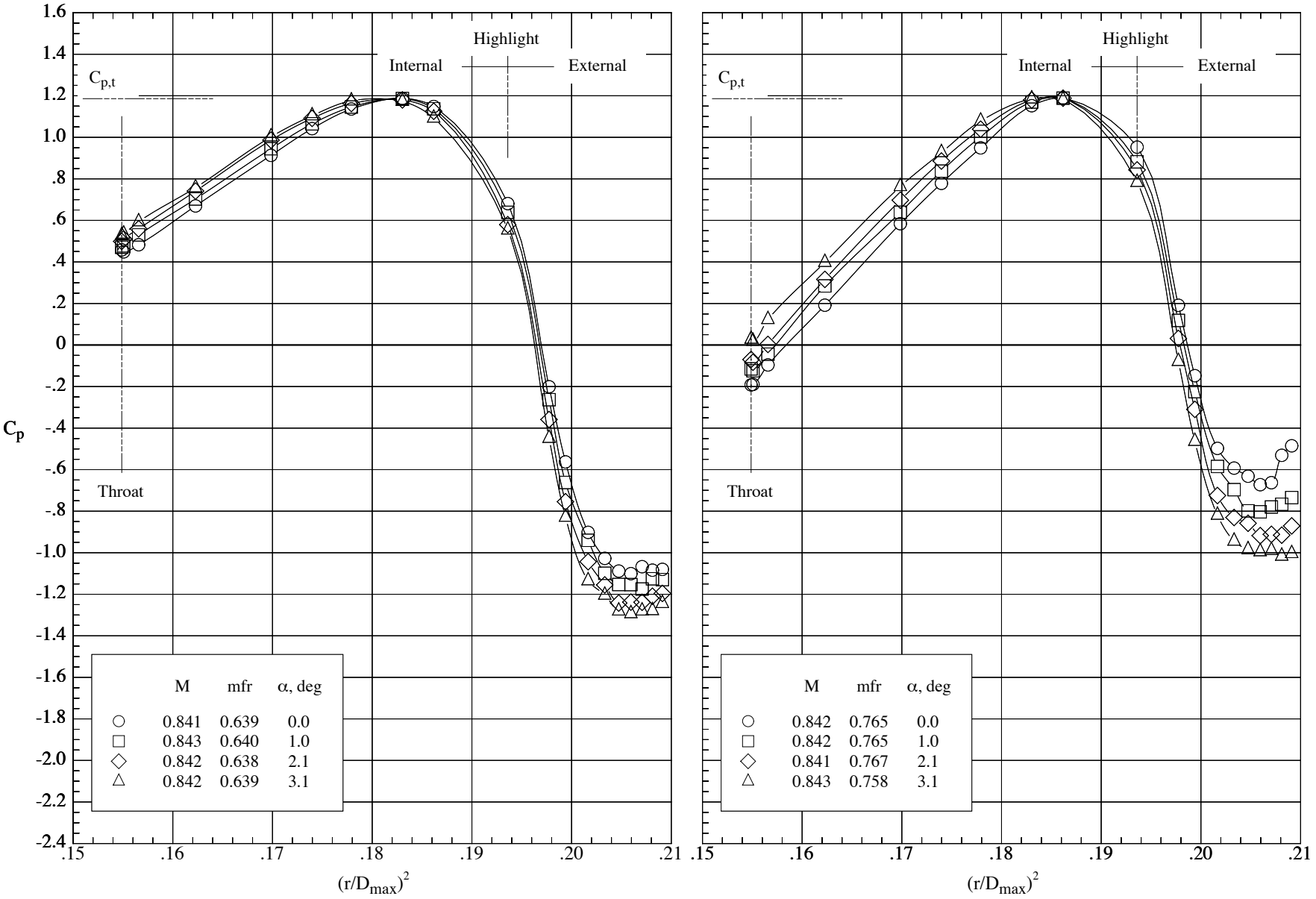
(f) M = 0.89 and 0.92.

Figure 25.- Concluded.



(a) mfr = 0.26 and 0.47.

Figure 26.- Stagnation point location on Cowl F at several angles of attack for several mass-flow ratios at Mach number 0.84. ($\phi = 0°$ row of orifices.)



(b) mfr = 0.64 and 0.76.

Figure 26.- Concluded.

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14. ABSTRACT

Pressure distributions on four nacelle cowl models of the same length and highlight area but different geometries external to the highlight are compared. The diameter ratio (ratio of highlight diameter to maximum diameter) of the four cowls was 0.854 and the length ratio (ratio of cowl length to maximum diameter) was 0.439. The cowls had the same internal geometry from the highlight to the throat with a contraction ratio (ratio of highlight area to throat area) of 1.250. Data for two other cowls which had a diameter ratio of 0.880, a length ratio of 0.400 and a contraction ratio 1.250 are also included. All the cowls had rows of static pressure orifices on the top and bottom surfaces. Mass-flow ratio was varied between 0.27 and 0.93. Some data were obtained between angles of attack from -2.1° and 4.1°. The test was conducted in the Langley 16-Foot Transonic Tunnel.

15. SUBJECT TERMS

Axisymmetric inlets; Inlets; Cowls; NACA 1-series

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